AN ANALYSIS OF HIT PROBABILITIES OF A TPQ SYSTEM AND A COMPARISON OF THE TPQ-10 AND TPQ-27 SYSTEMS

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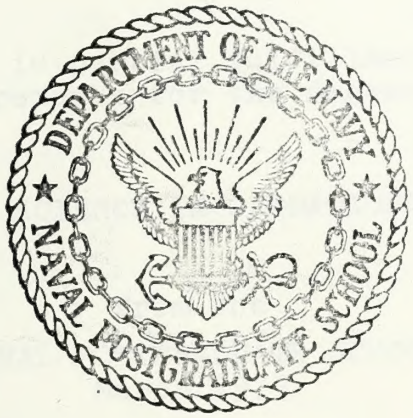

THESIS

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ABSTRACT

The probability of hitting a target of radius "r" with "b" bombs is calculated and tabled for given values of CEP of a TPQ system. For each CEP, "r" varies from 10 to 100 meters and "b" varies from 1 to 6, 10, or 20 depending on the bomb load. These probabilities are compared graphically to analyze the difference in hit probabilities for different drop release modes (single, cluster and ripple), different target sizes, and different target location errors.

Three TPQ-10's and three, two and one TPQ-27 are operated in a computer model of a Marine Amphibious Force operation, statistics are gathered on the number of targets hit with each system and their relative effectiveness is compared. It is concluded that under certain conditions two TPQ-27's can be at least as effective as three TPQ-10's and that in a few specific situations one TPQ-27 can perform as effectively as three TPQ-10's.

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I. INTRODUCTION

A. HISTORY

Close Air Support of ground forces has been a primary mission of Marine Corps Aviation ever since 1927, when the first air attack to be controlled by ground forces occurred in Nicaragua. During the Korean conflict the Marine Corps close air support capabilities were enhanced by the AN/MPQ-14 conical scan tracking radar and DC analog computer, which gave the ground units all-weather air support. In 1960, a second generation unit, the Radar Course Directing Central AN/TPQ-10, was placed into the Marine Corps inventory and subsequently served throughout the Vietnam conflict.

A third generation radar controlled bombing system, known as the Radar Course Directing Central AN/TPQ-27, has been developed by RCA Corporation and is currently undergoing operational evaluation at Camp Pendleton Marine Corps Base in Southern California. The TPQ-27 is presently scheduled to replace the TPQ-10 in the Marine Corps inventory on a one for one basis upon its acceptance by the Marine Corps.

B. INTENT OF STUDY

The purpose of this thesis is to compare the new TPQ-27 system and the old TPQ-10 system. The systems will be compared during their operation in the environment of a Marine Amphibious Force operation. Additionally, the probability of hitting a target under various TPQ system, target, and

aircraft parameters will be examined. Specifically, this thesis will investigate:

1. How do the TPQ-27 and the TPQ-10, in the same tactical environment, compare in effectiveness when the TPQ-27 replaces the TPQ-10 one for one?

2. Can the TPQ-27, in a Marine Amphibious Force sized operation, replace the TPQ-10 on less than a one for one basis and obtain the same level of effectiveness? For example, can two TPQ-27's be at least as effective as three TPQ-10's?

3. With a TPQ system, and a certain size target, what is the probability, given the TPQ system's CEP, that you will hit that target with at least one bomb? At least two bombs? At least M bombs, where M varies from 1 to a maximum value equal to the number of bombs dropped?

C. METHOD OF STUDY

To compare the TPQ-27 system with the TPQ-10 system, each will be operated, through simulation, in a computer model of the ground controlled radar bombing operations of a Marine Amphibious Force in a generalized tactical environment. This model is based on the notional Marine Amphibious Force described in Ref. 1. The primary measure of effectiveness is the total number of targets hit. Statistical analysis of the results of the simulation is used to make the conclusions.

To investigate the probabilities of hitting the target with a TPQ system a computer simulation model of a

TPQ-aircraft-target system was developed. The simulation involves dropping hundreds of thousands of bombs over a wide range of target sizes (with and without target location errors) and CEP's, to gather meaningful statistics. CEP functions for each system were derived from data in Ref. 2 and Ref. 3. Tables were generated to provide easy access to the probabilities and their respective confidence bounds. Values of these probabilities are tabled for:

1. Cluster release (all bombs dropped together)
2. Ripple release (each bomb released a fraction of a second apart)
3. Single release (one bomb released at a time)
4. Cluster release with a target location error.

These tables make for interesting comparisons between type of drop and the probabilities of hitting a target, and also the effect that an error in the location of the target can have on the probability of hitting the target and the change in this effect as the CEP and the target size change.

II. DETERMINATION OF HIT PROBABILITIES FOR TPQ SYSTEMS

One of the questions that this thesis examines is what are the probabilities of hitting targets of various sizes given the Circular Error Probable (CEP) of the system? To answer this question a model was made consisting of a TPQ system, an aircraft with an ordnance load of n bombs, and a target of radius r. A FORTRAN computer program was then used to simulate the model on the computer and sufficient statistics were accumulated to give the probabilities sought.

A. THE MODEL

The bomb dropping model consists of an aircraft which carries n 500 pound Mk 82 bombs, a TPQ system with known CEP characteristics, a target of radius r, and a target location error e. The aircraft has the capability to drop its ordnance in either the single, cluster, or the ripple mode. In the single mode, it drops one bomb at a time (one bomb per run), n times. In the cluster mode, the aircraft drops its entire bomb load simultaneously. In the ripple mode the bomber releases each bomb t seconds apart. The CEP of the radar system, and the ballistic dispersion characteristics of the bombs are used as parameters to randomly generate bomb impact points. The distance between the impact point and the true target center can then be compared to the target radius to determine, for each bomb, whether or not a hit occurred.

In this model these outcomes are considered Bernoulli trials and are classified as "success" and "failure". A success is a target hit and a failure is a miss. The probability p of hitting the target is then calculated using the results of these Bernoulli trials.

Figure II.A.1 shows the flow of the model. With inputs of target location error, drop mode, and bomber altitude, n bombs are dropped b times for each probability sought. The output shows this probability and the confidence interval around it. Probabilities of hitting a target of radius r with m or more bombs are calculated where r ranges from 10 to 100 meters in 10 meter intervals, and m ranges from 1 to n, the total number of bombs dropped.

1. Circular Error Probable (CEP)

CEP is defined as the radius of the circle centered at the mean (target center) which contains 50% of the bomb impact points. Page 29 of Ref. 4 shows that the CEP is based on a bivariate normal distribution - the horizontal or deflection, and the vertical, or range, positions from the target center are independent and normally distributed. It further shows the standard deviations of both range and deflection to be equal to the CEP divided by 1.1774.

The CEP of the TPQ system can be divided into two components, system and ballistic. The ballistic component is caused by ballistic dispersion of the bomb from the time it is released from the aircraft to the time it hits the ground. The system component of the CEP is a result of all

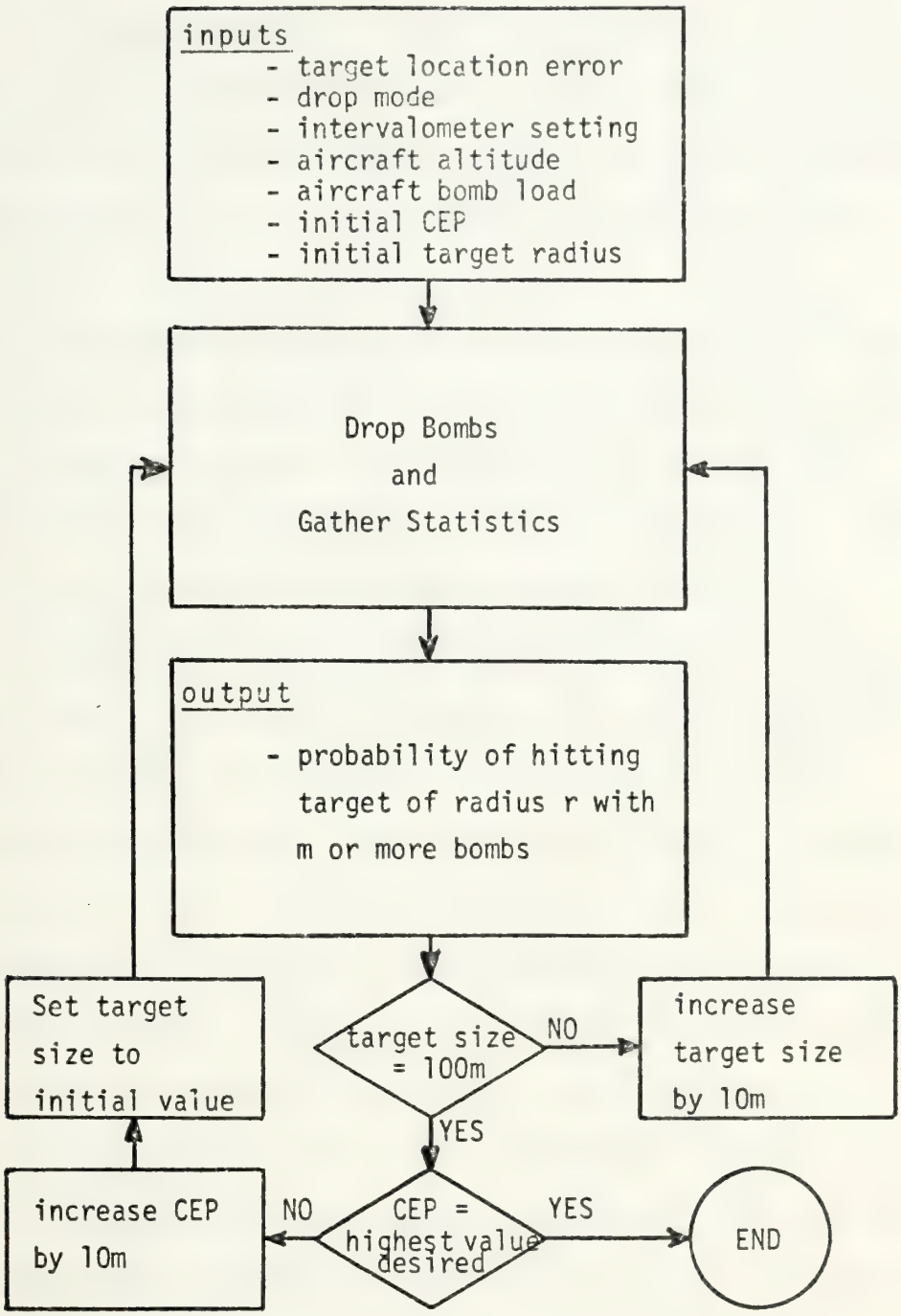


Figure II.A.1. Flow of Bomb Dropping Model

factors other than ballistic. The ballistic and system components will be referred to as ballistic CEP and system CEP, and they can each be partitioned into range and deflection components. It is assumed that the ballistic error and the system error are independent. This assumption is reasonable considering that in this model all bomb releases are made from level flight at constant airspeed. Ballistic error is a function only of the trajectory through which the bomb falls. The trajectory of the Mk 82 bomb is tabled in Ref. 5 as a function of release parameters, and the ballistic dispersion characteristics of the Mk 82 bomb are reported in Ref. 6. For the airspeed/altitude combination of 500KTAS/20000FT, a 200 foot altitude error and/or a 5 KTAS error in airspeed, constitute deviations in release parameters of 1% and result in ballistic dispersion errors of less than 0.5%. It seems that for an aircraft under automatic flight control, airspeed or altitude errors as high as 1% could be considered excessive. In fact, errors in airspeed greater than 5 KTAS and in altitude greater than 100 feet at 20000 feet were cause for disqualification of the bombing run in the TPQ-27 test plan. It is felt that such small errors have negligible effects on the trajectory and that therefore the assumption of independence is justified. It should be noted that the tables in Ref. 5 assume an ejection velocity of zero and that this assumption therefore also applies to this model.

a. System Error CEP

The component of CEP due to system error is the reason that the pattern center, or mean point of impact (MPI) of the bombs dropped does not coincide with the target center. If there were no system error then the only error would be entirely attributable to ballistic dispersion. If a group of bombs is dropped at precisely the correct release point for a given target then system error is zero and their impact points should be scattered about that target according to the bivariate normal distribution with mean equal to the target center and standard deviations in the range and deflection direction a function of the ballistic CEP and trajectory. Thus if the system error is zero, then the MPI and the target center will coincide. On the other hand, if there were no ballistic dispersion, only system error, then all the bombs released together would impact the ground at one point - the MPI.

b. Ballistic Dispersion CEP

The CEP due only to ballistic dispersion is what causes the bomb impact pattern about the MPI. The bombs are distributed about the MPI according to the bivariate normal distribution. The range and deflection standard deviations are equal in the plane perpendicular to the trajectory.

2. Calculations of the Standard Deviations From CEP

a. Standard Deviation from Ballistic CEP

Ref. 6 gives the CEP of ballistic dispersion, CEP(B), for the Mk 82 bomb as 2.9 mils in the plane normal to the trajectory. This means that for every 1000 feet of trajectory, the bomb disperses in a circular normal fashion from the centerline of the trajectory with a CEP(B) of 2.9 feet. This dispersion in terms of standard deviation from ballistics in deflection, SDBD, is equal to CEP(B)/1.1774. The standard deviation from ballistics in range, SDBR, has the same value in the plane perpendicular to the trajectory and has the value of CEP(B)/(1.1774 x SIN w) when projected on the ground. w is the angle which the trajectory of the bomb makes with the ground. Thus,

$$SDBD = \frac{2.9}{1.1774} = 2.46 \text{ mils} = \frac{2.46}{1000}[\text{trajectory(feet)}]$$

$$SDBR = \frac{2.46 \text{ mils}}{SIN\ w} = \frac{2.46}{1000} \times \frac{\text{trajectory}}{SIN\ w} \text{ (feet)}.$$

b. Standard Deviation from Total CEP

The total standard deviation in range, SDTR, and the total standard deviation in deflection, SDTD, are

$$SDTR = \frac{CEP}{1.1774}$$

and,

$$SDTD = \frac{CEP}{1.1774} .$$

c. Standard Deviation From System

Because the total range and deflection errors are each normally distributed about the mean, and the ballistic and system range and deflection errors are also normally distributed about their means, the system standard deviations can be calculated directly.

$$SDTR^2 = SDBR^2 + SDSR^2$$

$$SDTD^2 = SDBD^2 + SDSD^2$$

therefore,

$$SDSR = (SDTR^2 - SDBR^2)^{\frac{1}{2}}$$

$$SDSD = (SDTD^2 - SDBD^2)^{\frac{1}{2}} .$$

3. Simulation of Dropping the Bombs

Now that the standard deviations are known the bomb dropping simulation can be formulated. The first point to find on the ground is the MPI. Since it is bivariate normally distributed about the target with mean range = 0, mean deflection = 0, and standard deviations SDSR, SDSD, this point can be generated as follows.

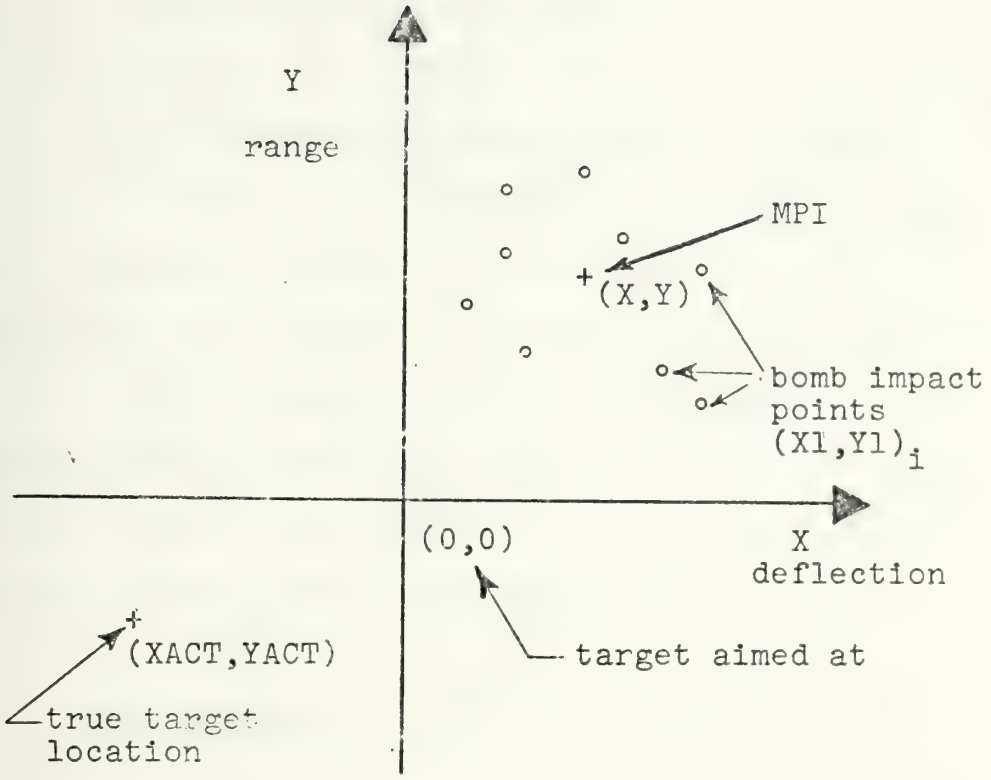


Figure II.A.2

The target aimed at is the center (0,0), in a rectangul r coordinate system X,Y. The MPI is a point (X,Y) where X ~ N(0,SDSD), and Y ~ N(0,SDSR). A normal random number generator is used in the computer program. If there is a target location error then the deflection error, XACT, and /or the range error, YACT, will be greater than zero and the MPI becomes (X-XACT,Y-YACT) relative to the true target. XACT and YACT are the X and Y distances between the real target center and the point thought to be the target center. The target, the MPI, and the bomb impact points are shown in Fig. II.A.2.

The next step is to generate the same number of bomb impact points as the number of bombs dropped on this run. If there are N bombs dropped, then these points, $(X1,Y1)_i$, i = 1,N, are each generated with X1 ~ N(0,SDBD), and Y1 ~ N(0,SDBR). Thus N bomb impact points are now scattered about the origin. By adding X to each X1 and Y to each Y1 the bomb impact points are translated to a new coordinate system parallel to the old one but with the MPI as center. The distance between each impact point and the true target center is now determined by

$$DIS = \text{distance} = ((X-XACT+X1)^2+(Y-YACT+Y1)^2)^{\frac{1}{2}}$$

where XACT and YACT are each equal to zero if there is no target location error.

The only change necessary if the drop is made in the ripple mode is a range correction for each bomb. It is assumed that the ripple drop is made so that the center of the "stick" coincides with the target aimed at. This can be thought of as a changing Y coordinate in the MPI for each bomb. This value of the Y coordinate for the nth bomb, call it Y12(n), is,

for N even,

$$Y12(n)=(Y+\tfrac{1}{2}-n)x(\text{speed of aircraft})x(\text{intervalometer time})$$

for N odd,

$$Y12(n)=(Y+1-n)\times(\text{speed of aircraft})\times(\text{intervalometer time})$$

where N is the total number of bombs, and

$$n = 1,N.$$

The distance between bomb impact points and true target center is the same as above except that Y is replaced by Y12.

4. Calculation of Results

To determine the probability of hitting the target, with m bombs, n bombs are dropped on the target 100 times, where n is the total number of bombs carried by the aircraft. For each of the 100 trials, if m or more bombs hits within the target radius, a success is scored. The total number of successes scored in the 100 trials divided by 100, the total number of trials, is, as shown in Ref. 7, an efficient unbiased estimator of the probability of success in a single trial. Thus

$$\hat{p} = \frac{\text{number of successes}}{\text{number of trials}} .$$

As shown on pp. 99-103 of Ref. 8, a confidence interval for p can be obtained as follows:

$$p = \hat{p} \pm W_{1-\frac{\alpha}{2}} \left(\frac{\hat{p}(1-\hat{p})}{100}\right)^{\frac{1}{2}}$$

where $W_{1-\frac{\alpha}{2}}$ = the $1-\frac{\alpha}{2}$ percentage point of the standard normal distribution.

A detailed flowchart of the computer model is contained in Appendix A. A listing of the computer program is provided in Appendix E.

B. RESULTS

The computer output from the simulation is presented in Appendix C. The output is in the form of tables which give both the probability of hitting a target of "M" meters radius with "B" or more bombs and a 95% confidence interval for the probability. Individual tables present the results for different CEP's, different release conditions (cluster, ripple, and single drops), different bomb loads, and different values of target location error. All of the combinations utilized were tested against ten different target sizes. The target sizes utilized were 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100 meter radius targets.

Tables II.B.1 and II.B.2 indicate which combination were investigated in the simulation. A "x" indicates that that particular combination of factors was simulated.

Utilizing the data presented in Appendix C, three different types of graphs were constructed. The first type plotted the probability of hitting a target of given size with one or more bombs vs. CEP for different values of target location error. These graphs are presented in Figures II.B.1 to II.B.4. The second type of graph plotted showed the probability of hitting a target of given size with one or more bombs vs. CEP for different bomb loads. These graphs

TABLE II.B.1

300 knot, 10,000 ft alt. 10-500 lb. bombs

Target Location Error is in meters (TLE)

Ordnance delivery mode (ODM)

c = cluster
r = ripple
s = single

Circular Error Prob. (CEP)	ODM	c	c	c	c	c	c	c	s	r.05	r.10	r.15
	TLE	0	20	40	60	80	100	120	0	0	0	0
	30	x	x	x	x	x	x	x	x			
	40	x	x	x	x	x	x	x	x	x	x	x
	50	x	x	x	x	x	x	x	x			
	60	x	x	x	x	x	x	x	x			
	70	x	x	x	x	x	x	x	x	x	x	x
	80	x	x	x	x	x	x	x	x			
	90	x	x	x	x	x	x	x	x			
	100	x	x	x	x	x	x	x	x	x	x	x
	110	x	x	x	x	x	x	x	x			
	120	x	x	x	x	x	x	x	x			

TABLE II.B.2

SPEED	500 knots			300 knots	
ALT.	20,000 ft.			10,000 ft.	
# BOMBS	10	10	6	6	20
Delivery Mode	s	c	c	c	c
CEP 30				x	
CEP 40	x	x	x	x	
CEP 50	x	x	x	x	
CEP 60	x	x	x	x	
CEP 70	x	x	x	x	x
CEP 80	x	x	x	x	
CEP 90	x	x	x	x	
CEP 100	x	x	x	x	x
CEP 110	x	x	x	x	
CEP 120	x	x	x	x	

are presented in Figures II.B.5 to II.B.8. The third type of graph plotted the probability of hitting a target, of given size and with a given system CEP, with "N" or more bombs vs. "N" bombs for different delivery modes. Delivery modes utilized were cluster drop, single drop, and ripple drop with the .10 second intervalometer setting. These graphs are presented as Figures II.B.9 to II.B.16.

1. Analysis of Target Location Errors

The graphs in Figures II.B.1 to II.B.4 show the variation in the sensitivity of the objective function (hitting the target) to the degree of target location error. It is noted that as CEP increases the probability of hitting the target is sensitive to the degree of error in the location of the target up to a certain point.

The smaller the target the more important target location error is in effecting the probability of hitting the target. But this effect is quickly damped out by the inaccuracies caused by increasing CEP. As target size increases a larger and larger target location error is needed before degradation is seen; but once again increasing CEP eventually overwhelms the effect caused by location error. The importance of target location error is very dependent on two factors. If the CEP is large then target location error has less and less an effect on the probability of success. For the combination of large targets and large CEP, target location error is not a pertinent problem.

2. Analysis of Bomb Load

The graphs in Figures II.B.5 to II.B.8 show the variation in the sensitivity of the objective function (hitting the target) to the bomb load of the aircraft. These graphs are developed for cases in which the target location error was zero. Figure II.B.5 shows that for a 10 meter target and for small CEP's (less than 60 meters) that the probability of success is a function of the bomb load. For example: for a CEP of 40 meters the probability of hitting the target with one or more bombs goes from .31 for a 20 bomb load to .12 for a 6 bomb strike. Figures II.B.6, II.B.7 and II.B.8 show that as the target size increases the probability of hitting the target is not sensitive to the bomb load of the aircraft for ordnance delivered in the cluster mode. The implication is that if you are striking a relatively soft target in which the number of bombs that fall within the specified distance from the target is of minimal importance (for example: an unarmoured vehicle with a high sensitivity to fragments) then unless your system exhibits a small CEP and your target has a small "target radius" an aircraft which will deliver fewer bombs can be equally effective as an aircraft with a large bomb load.

In general throughout these graphs it is noted that if the CEP is increased then the probability of hitting the target decreases. It was initially felt that as target location error increased a point would be reached at which the larger CEP would give a higher probability of success

due to the greater dispersion of the mean point of impact about the aimpoint. However for the range of CEP's (30 to 120 meters), the range of target sizes (10 - 100 meter radius) and the range of target location errors (20 to 120 meters) investigated in this simulation no such effect was discovered.

3. Analysis of Delivery Mode

The plots presented in Figures II.B.9 to II.B.16 show that for a given target size, for example - a target of radius 40 meters, the probability of hitting the target with "N" or more bombs is higher for low values of N when the single drop delivery mode is used. It is also noted that for small values of N that ripple drops provide as good a result as cluster drops. It is further noted that in both cases as N increases the cluster mode of ordnance delivery becomes the best. The same general relationships were found for 70 meter and 100 meter radius targets.

Figures II.B.11 thruII.B.13 present the plots for a given CEP (70 meters) and for varying target radii. It is noted that as target size increases that the ripple mode of operation compares more and more favorably to the cluster mode. The same remarks were seen to be true for the graphs for 100 meter CEP.

4. General conclusions and comments concerning use of the results

The information presented in Figures II.B.1 to II.B.16 and tabulated in Appendix C can be of use in a school situation to help commanders determine just what is a reasonable

target to attack. A small hard target such as a bunker might prove virtually impossible to destroy due to a high CEP associated with this target under certain conditions. The information tabulated will give the student a better feel of just how difficult a target is to destroy. The information could be used to determine an optimal allocation of resources. Given a limited number of aircraft how should they be employed against a mixed bag of targets to maximize the expected number of targets damaged or destroyed. It was seen during the analysis of the data that often the number of bombs dropped by the aircraft had little effect on whether or not at least one bomb got within the designated radius of the target. Perhaps the tactic could be considered for analysis whereby an aircraft engaging a relatively soft target on a TPQ mission would only deliver half of its ordnance against that target. Two missions could be executed by the one aircraft thereby possibly increasing the overall effectiveness of the aircraft. The analysis of the data also indicated that dropping the ordnance one at a time against targets vice in a cluster drop gives a better chance for successfully attacking the target under certain conditions. If the parameters of a tactical situation match the conditions under which single drops would be advantageous and if the tactical situation allows, then the optimal allocation of resources would be to employ strike aircraft in the single drop mode of operation.

The graphs presented in Figures II.B.1 to II.B.4 showed that target location error is an important problem but that a more important problem is the inherent accuracies of the system being utilized. The point is made that a sophisticated system for accurately determining target location is valuable only up to a point. When the system provides the user with information that the user cannot really use due to inherent inaccuracies in another system then that information is not worth the expenditure that went into obtaining it.

Further studies could be made using this simulation to determine optimum methods of delivering ordnance against different targets under other situations.

Probability of hitting a target of 10 meters radius with one or more bombs when dropping 10-500 lb. bombs in the cluster mode from an altitude of 10,000 feet as a function of CEP for various values of target location error

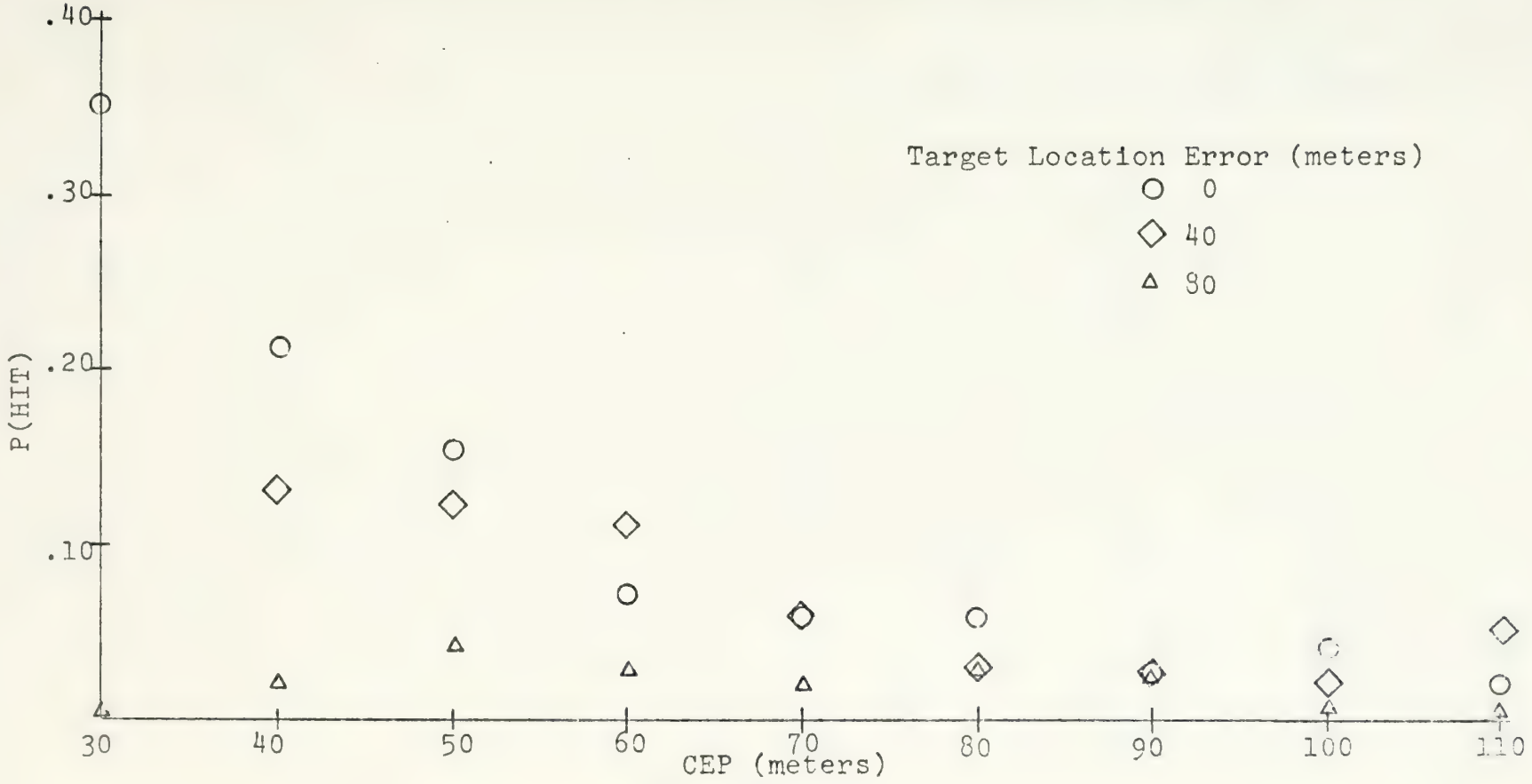


Figure II.B.1.

Probability of hitting a target of 30 meters radius with one or more bombs when dropping 10-500 lb. bombs in the cluster mode from an altitude of 10,000 feet as a function of CEP for various values of target location error

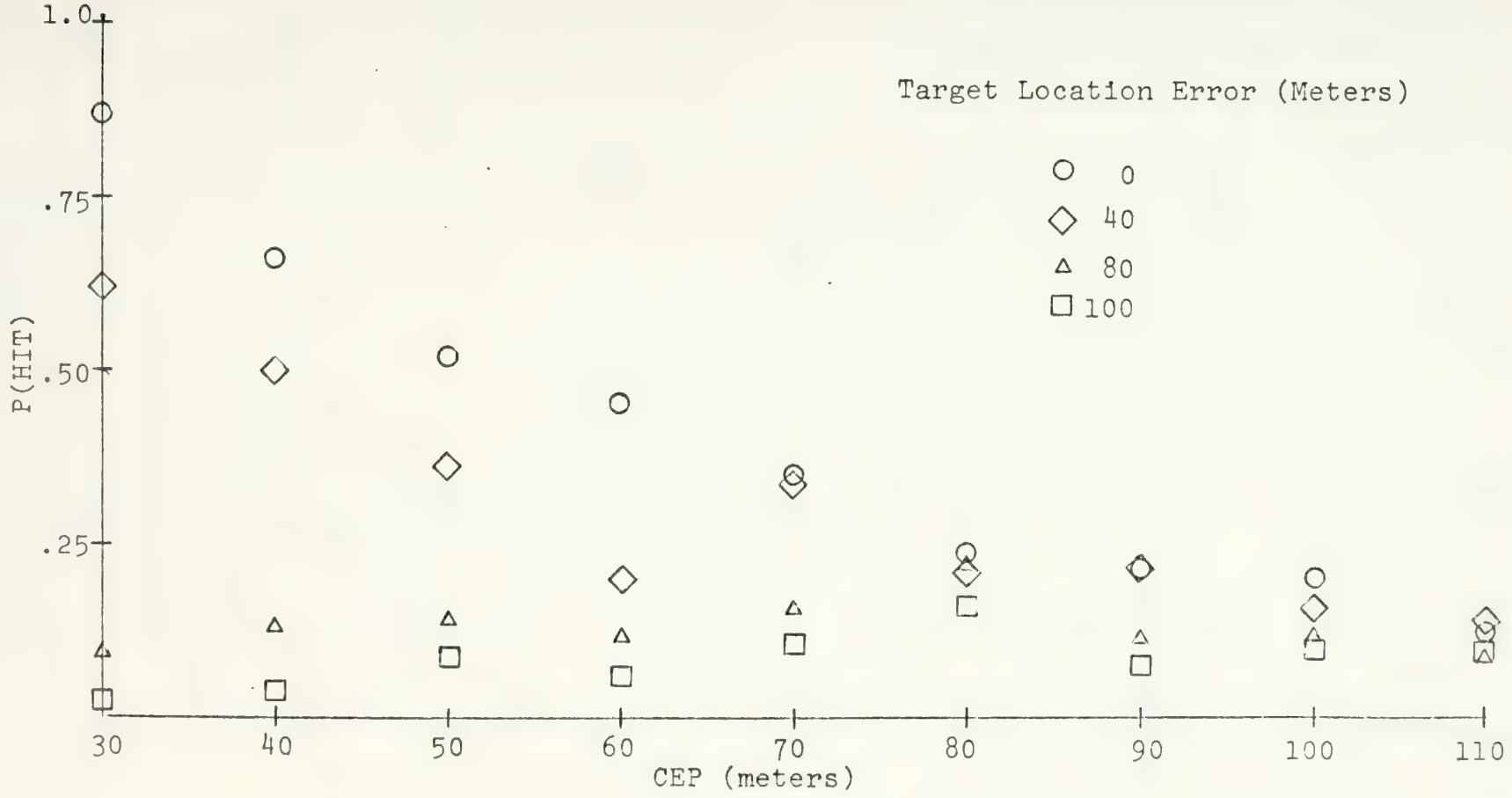


Figure II.B.2.

Probability of hitting a target of 70 meters radius with one or more bombs when dropping 10-500 lb. bombs in the cluster mode from an altitude of 10,000 feet as a function of CEP for various values of target location error

Figure II.B.3.

Probability of hitting a target of 100 meters radius with one or more bombs when dropping 10-500 lb. bombs in the cluster mode from an altitude of 10,000 feet as a function of CEP for various values of target location error

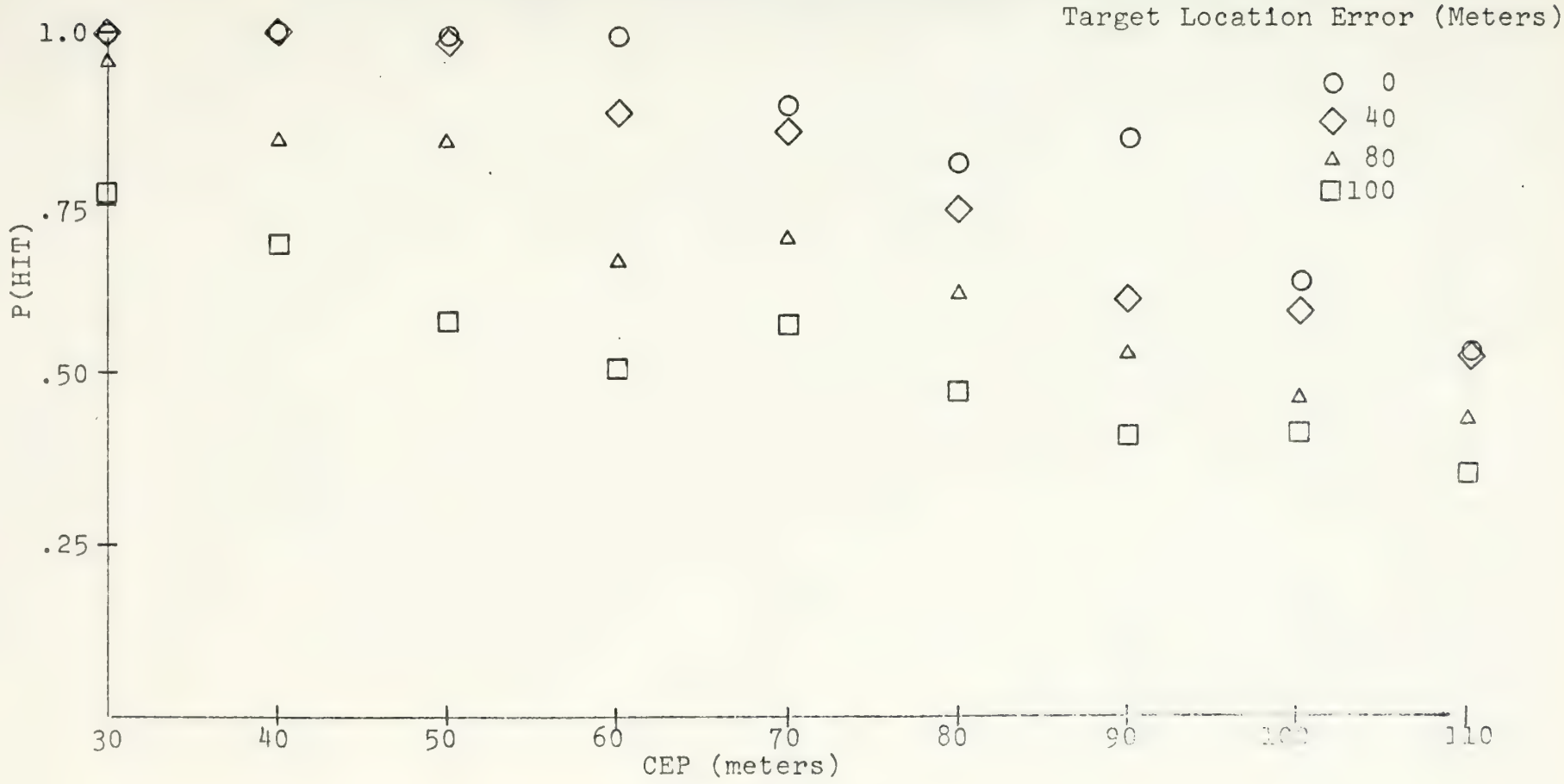


Figure II.B.4.

Probability of hitting a target of 10 meters radius when dropping 500 lb. bombs from an altitude of 10,000 feet with zero target location error vs. CEP for various bomb loads

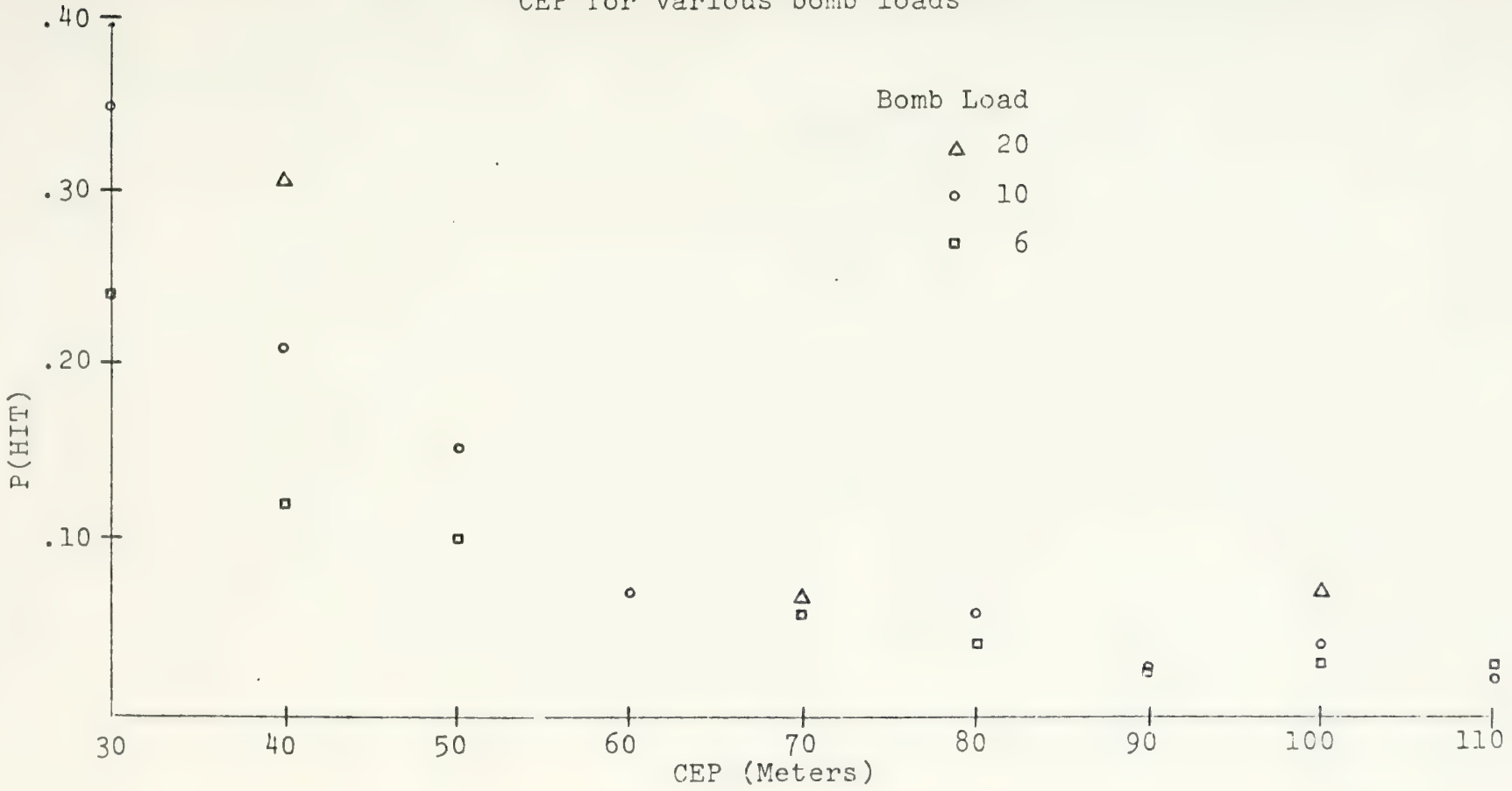


Figure II.B.5.

Probability of hitting a target of 30 meters radius when dropping 500 lb bombs from an altitude of 10,000 feet with zero target location error vs. CEP for various bomb loads

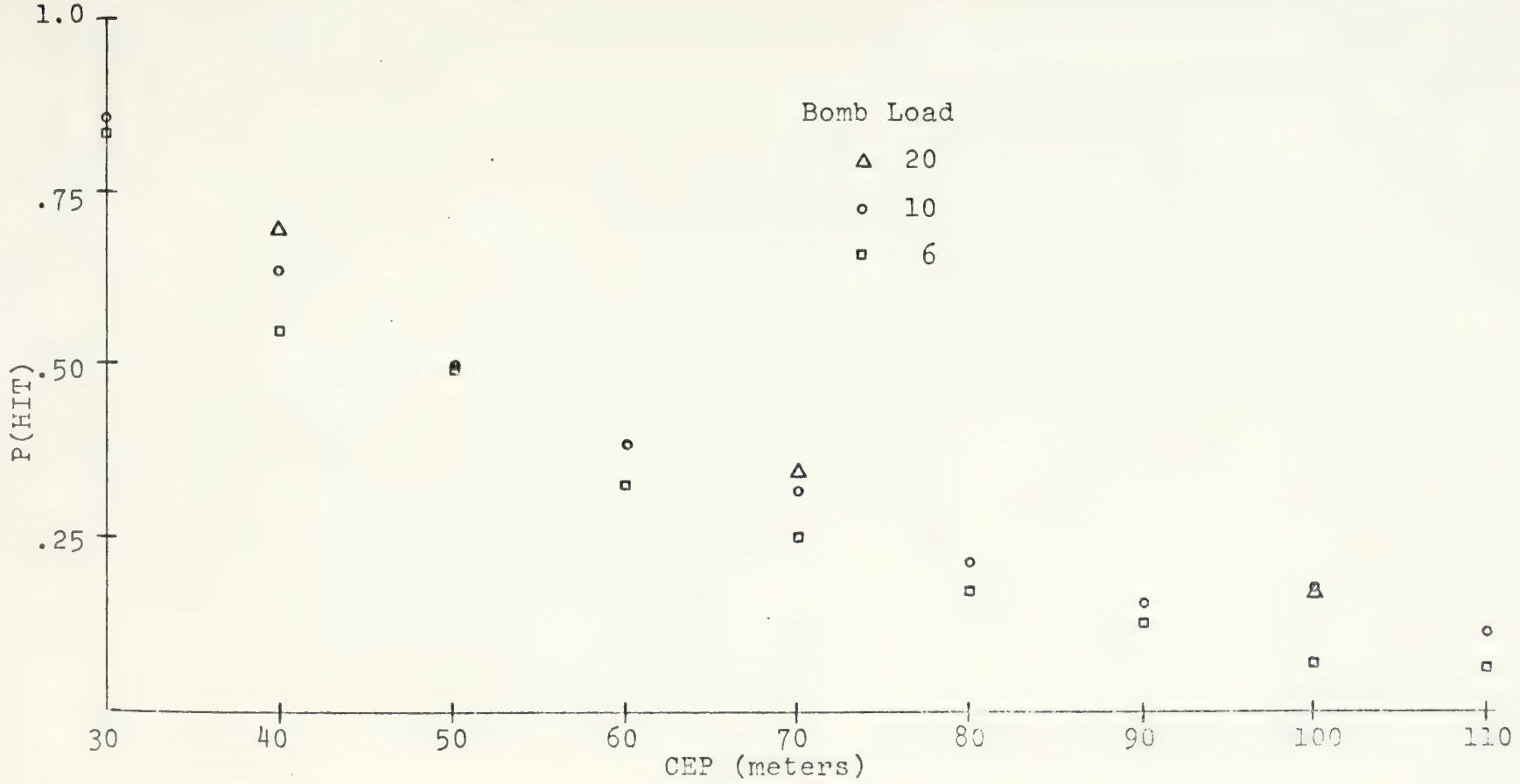


Figure II.B.6.

Probability of hitting a target of 70 meters radius when dropping 500 lb. bombs from an altitude of 10,000 feet with zero target location error vs. CEP for various bomb loads

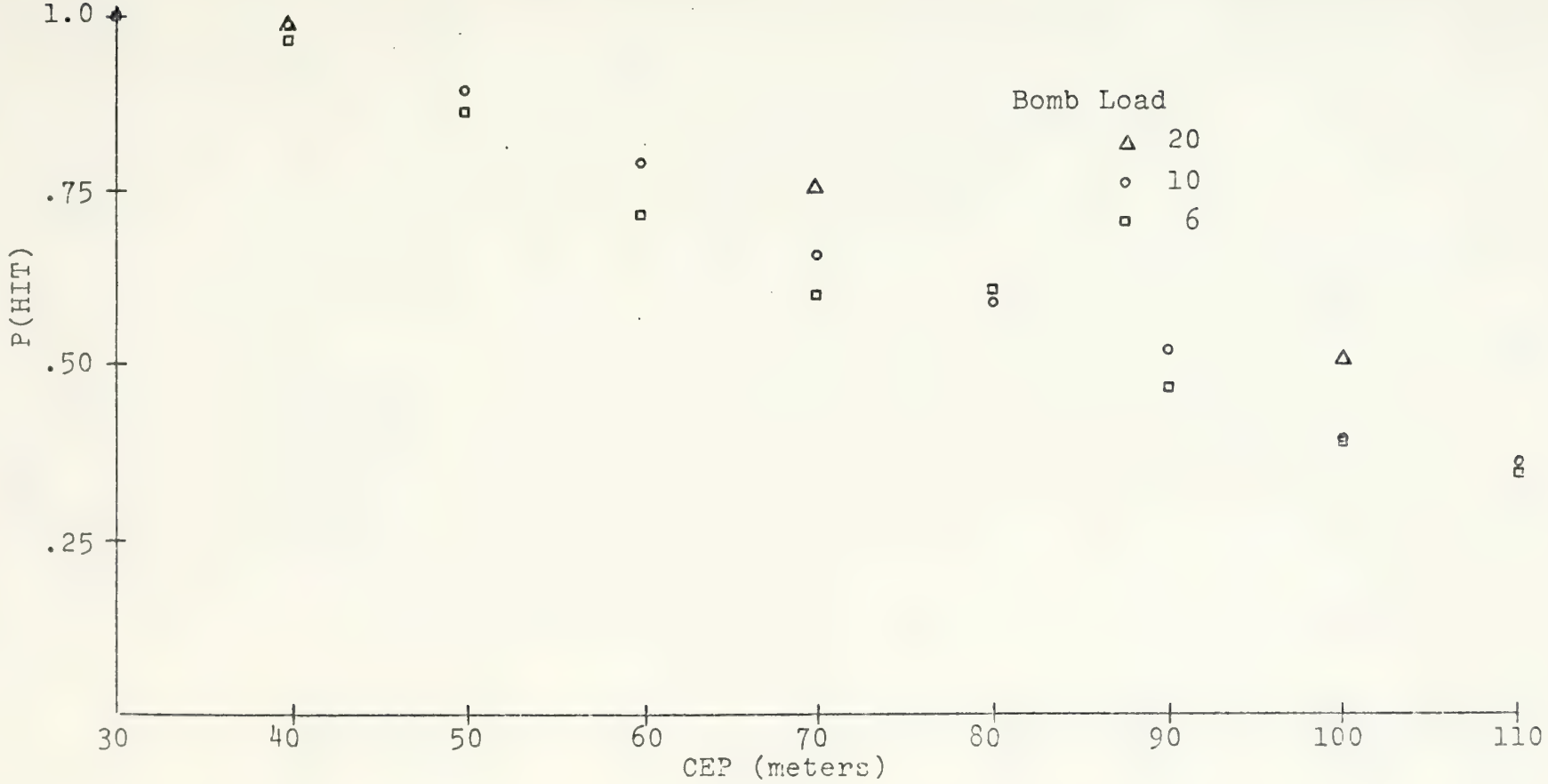


Figure II.B.7.

Probability of hitting a target of 100 meters radius when dropping 500 lb. bombs from an altitude of 10,000 feet with zero target location error vs. CEP for various bomb loads

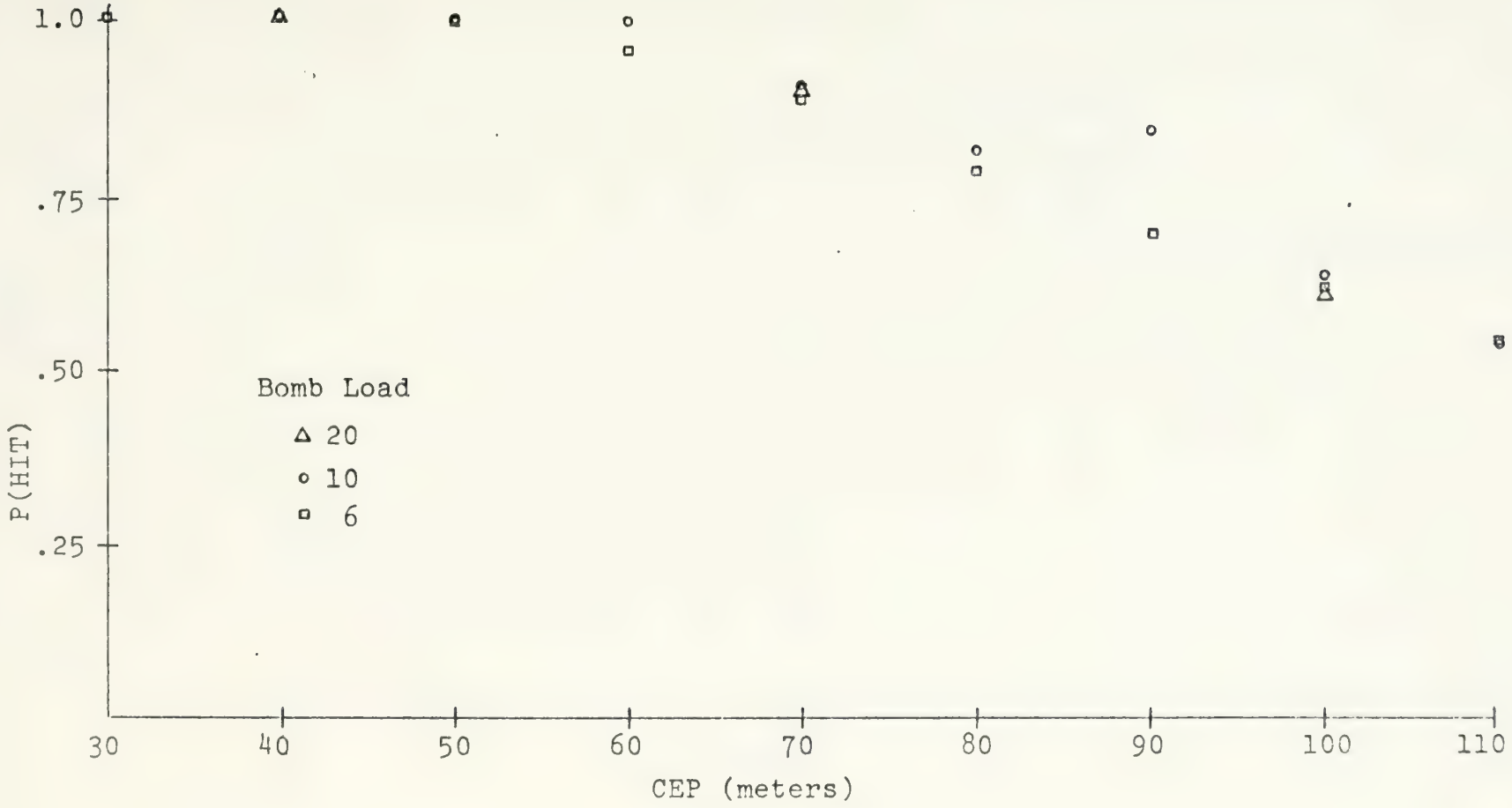


Figure II.B.8.

Probability of hitting a target of 30 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 40 meters and zero target location error vs. "N" bombs for various delivery modes

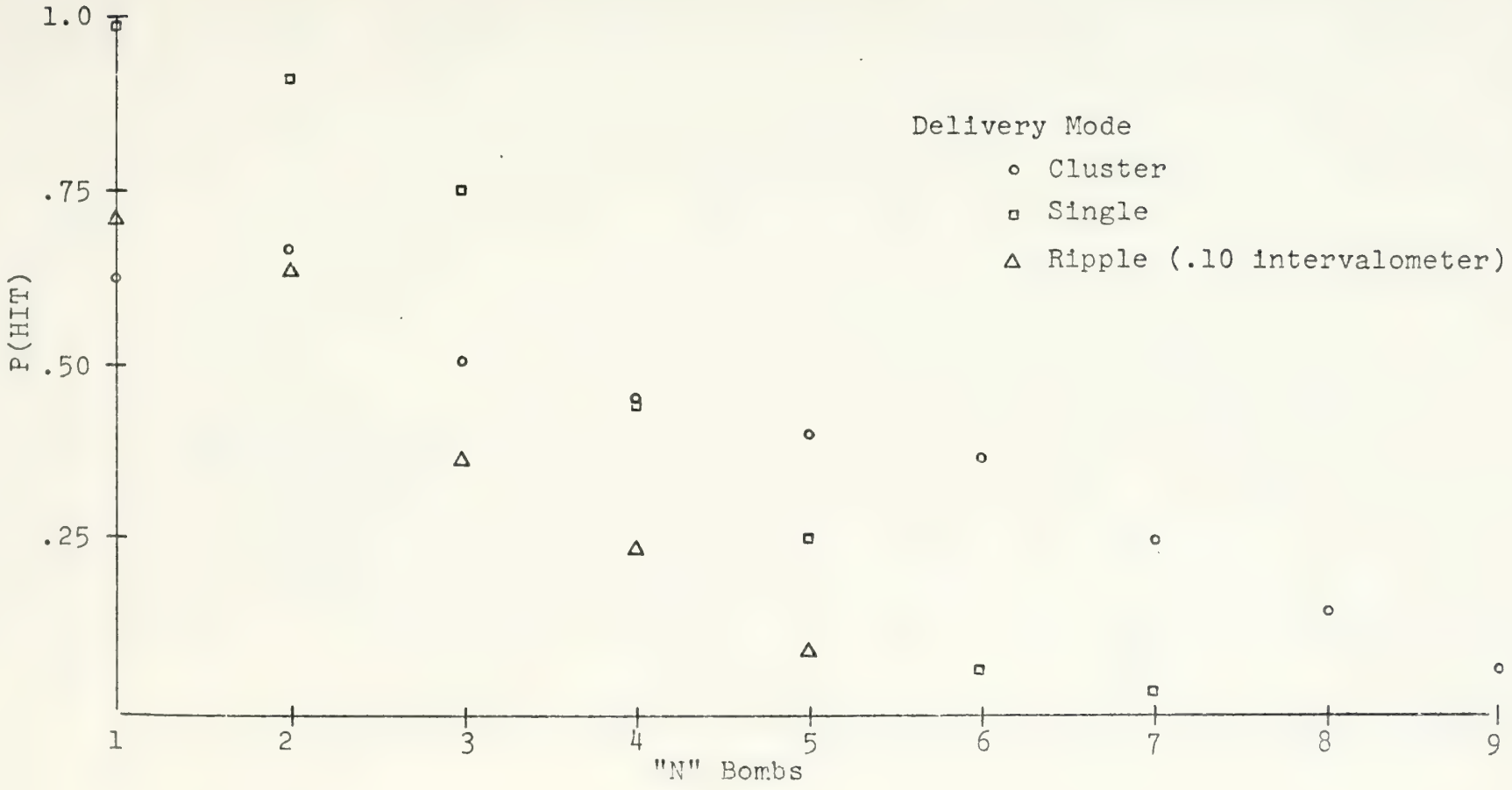


Figure II.B.9.

Probability of hitting a target of 70 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 40 meters and zero target location error vs. "N" bombs for various delivery modes

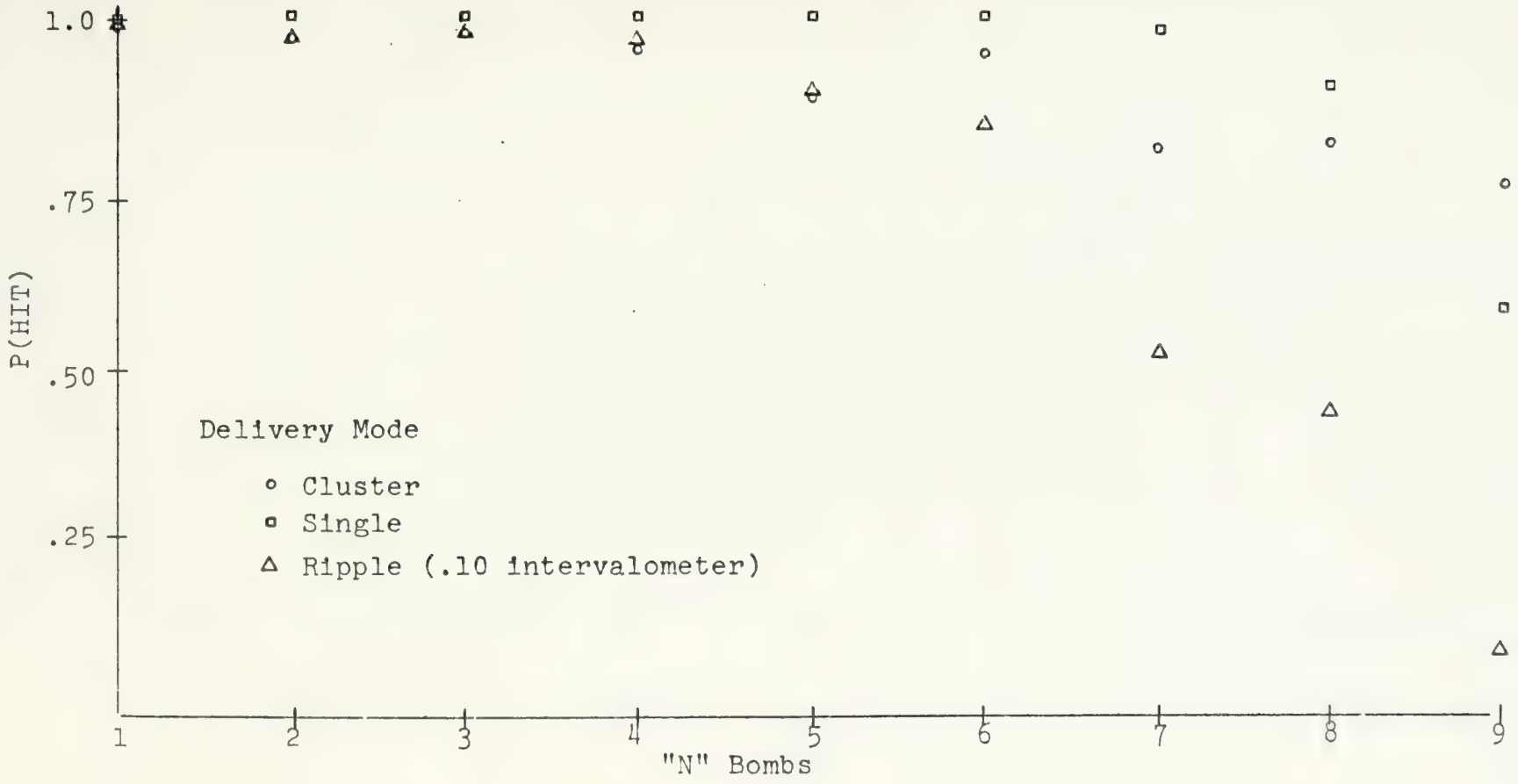


Figure II.B.10.

Probability of hitting a target of 30 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 70 meters and zero target location error vs. "N" bombs for various delivery modes

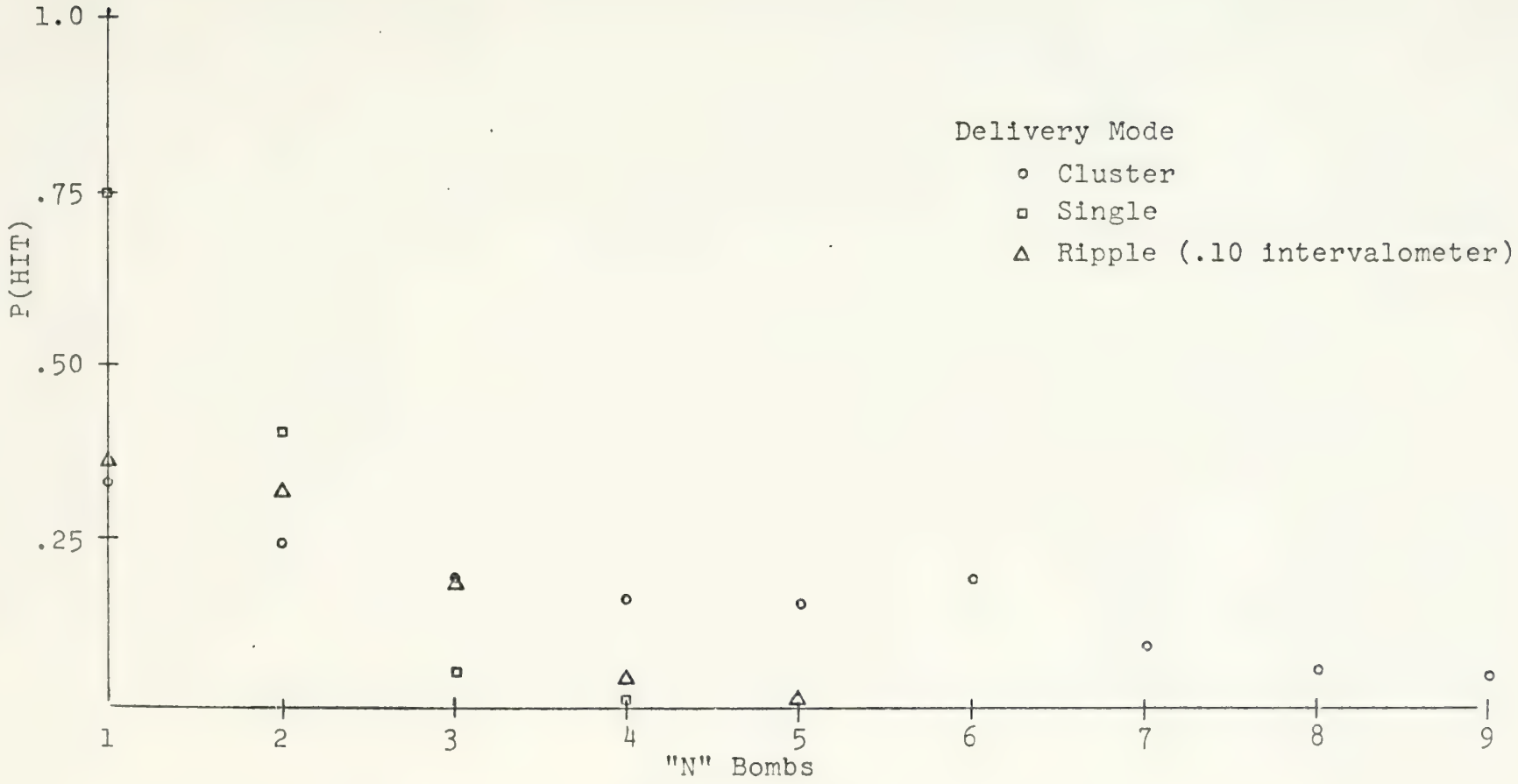


Figure II.B.11.

Probability of hitting a target of 70 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 70 meters and zero target location error vs. "N" bombs for various delivery modes

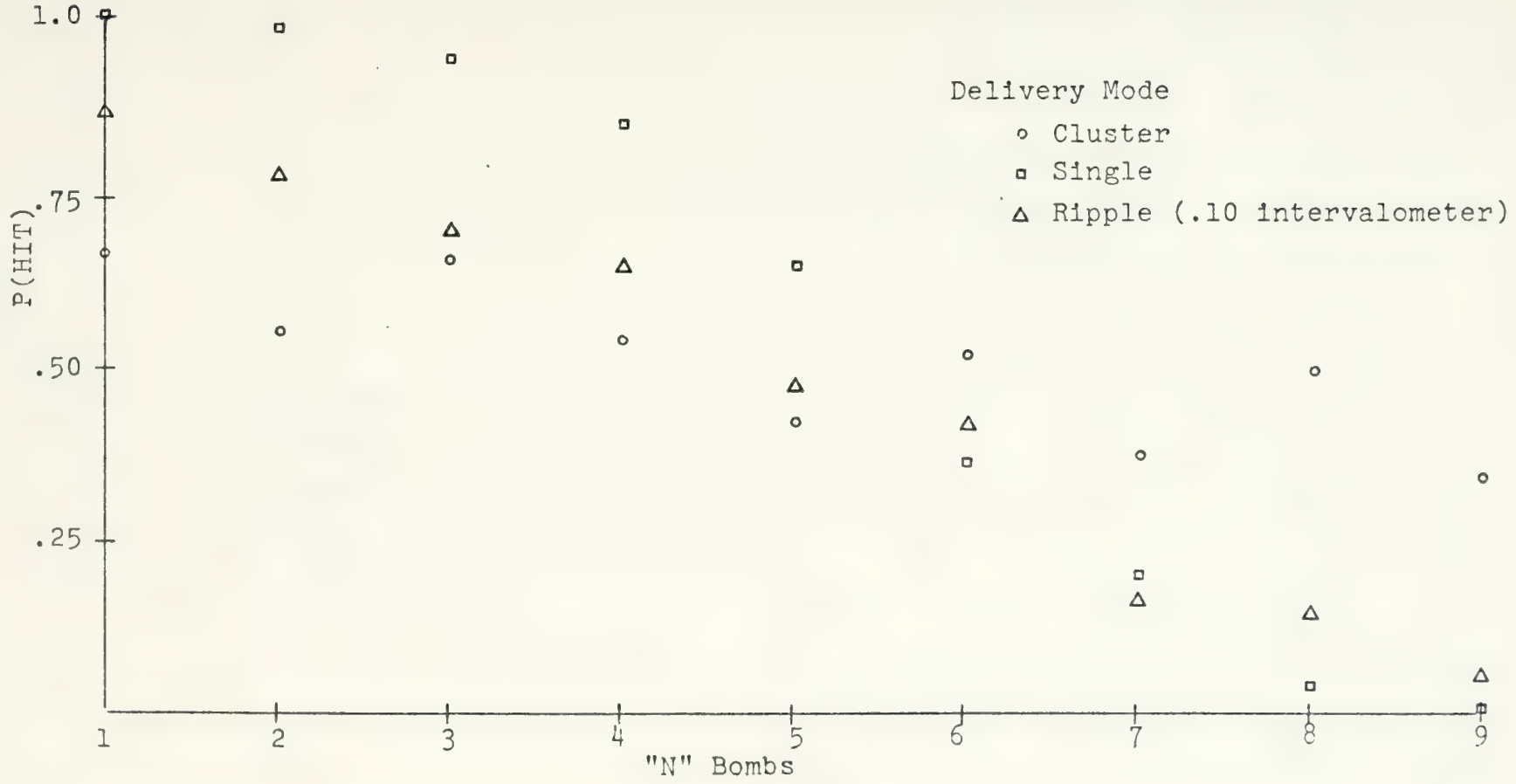


Figure II.B.12.

Probability of hitting a target of 100 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 70 meters and zero target location error vs. "N" bombs for various delivery modes

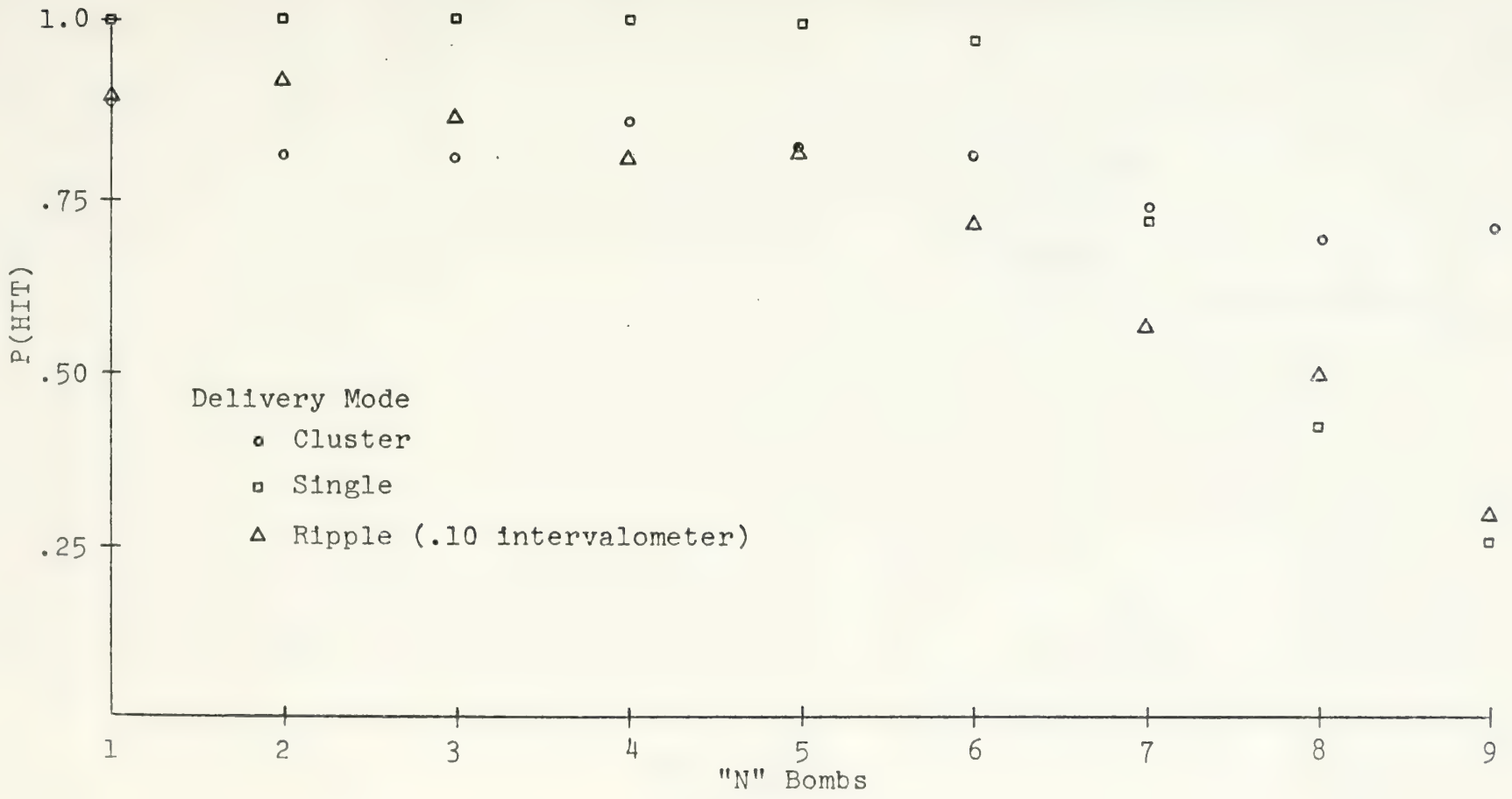


Figure II.B.13.

Probability of hitting a target of 30 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 100 meters and zero target location error vs. "N" bombs for various delivery modes

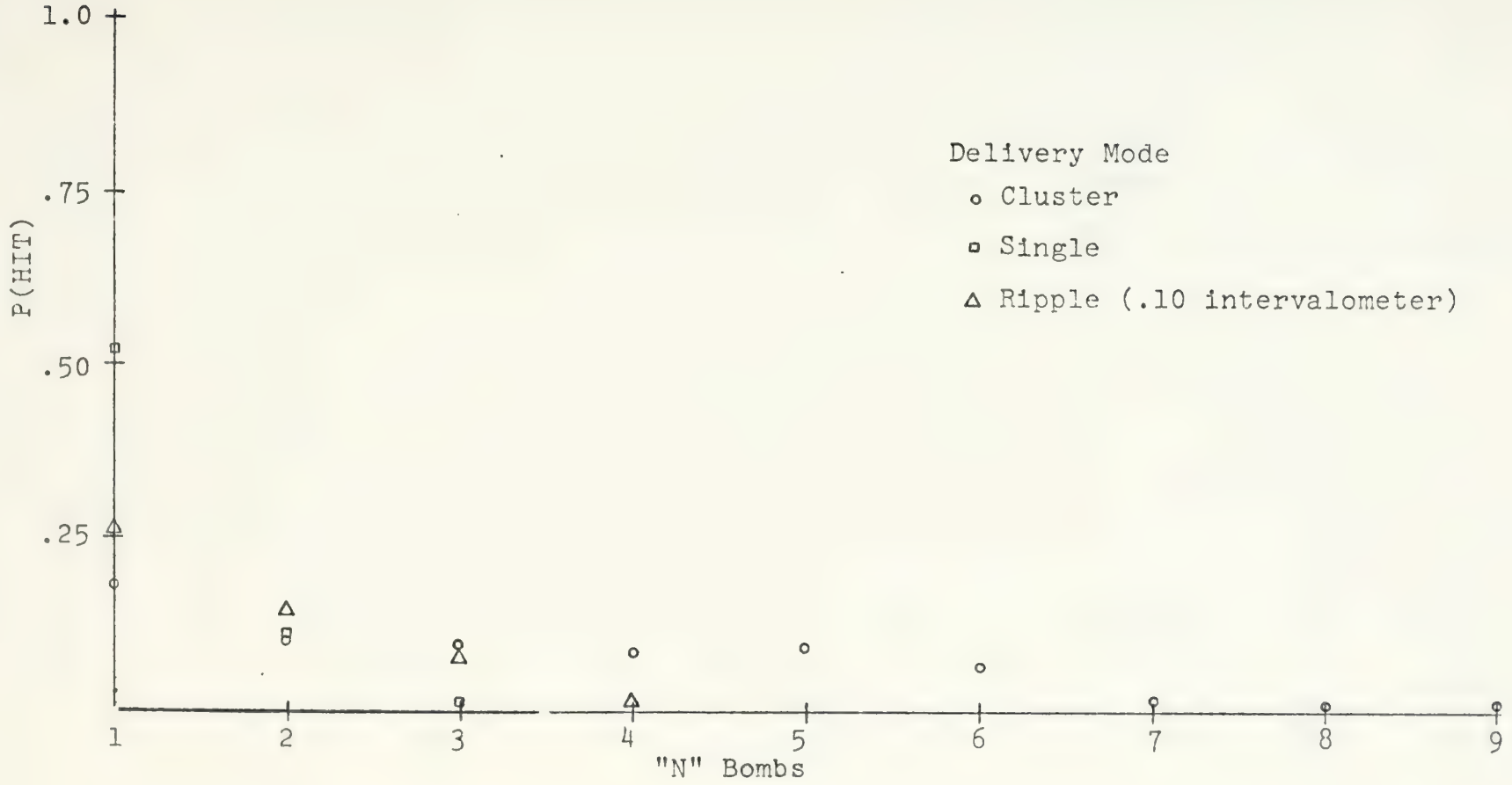


Figure II.B.14.

Probability of hitting a target of 70 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 100 meters and zero target location error vs. "N" bombs for various delivery modes

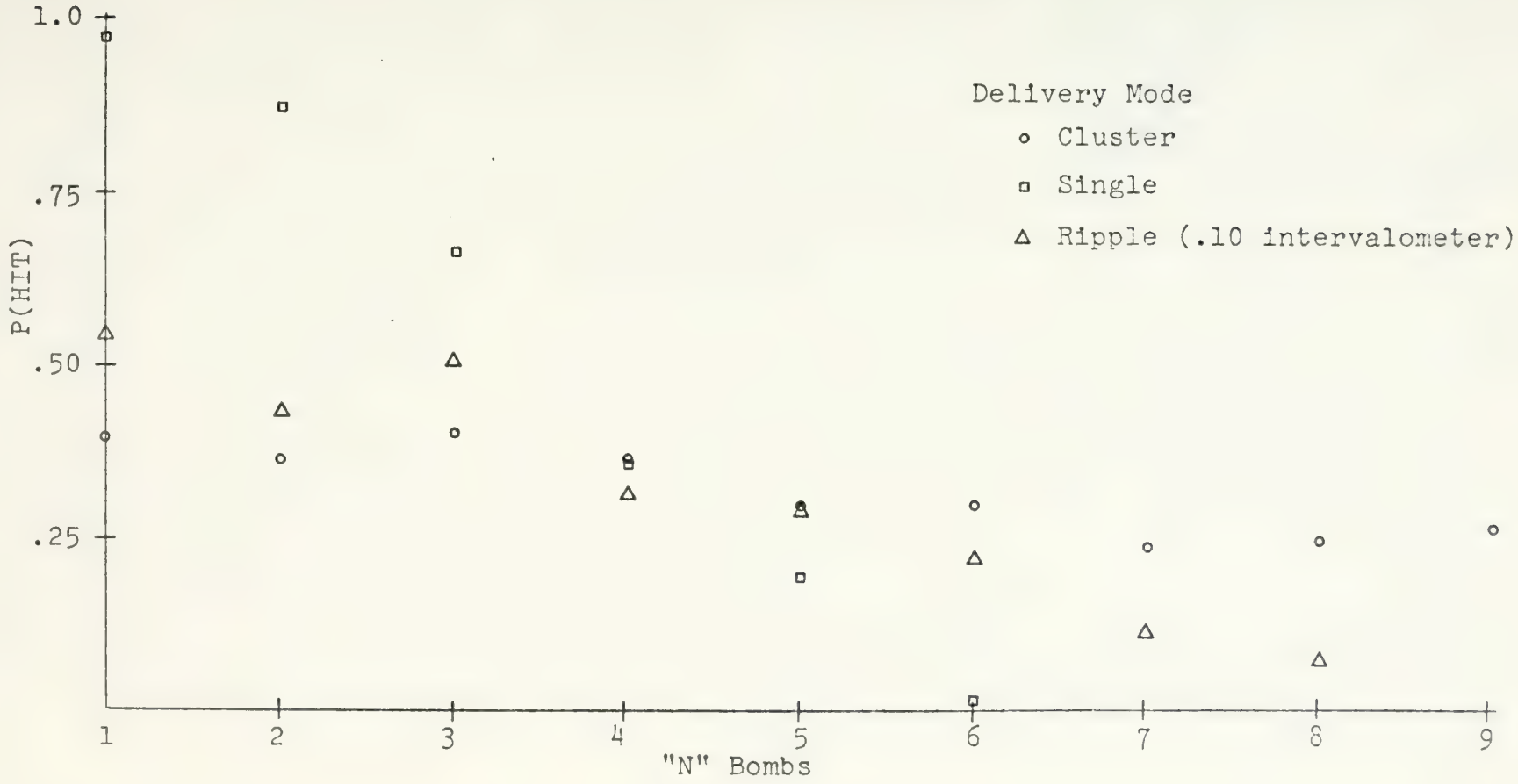


Figure II.B.15.

Probability of hitting a target of 100 meters radius with "N" or more bombs when dropping 10-500 lb. bombs with a CEP of 100 meters and zero target location error vs. "N" bombs for various delivery modes

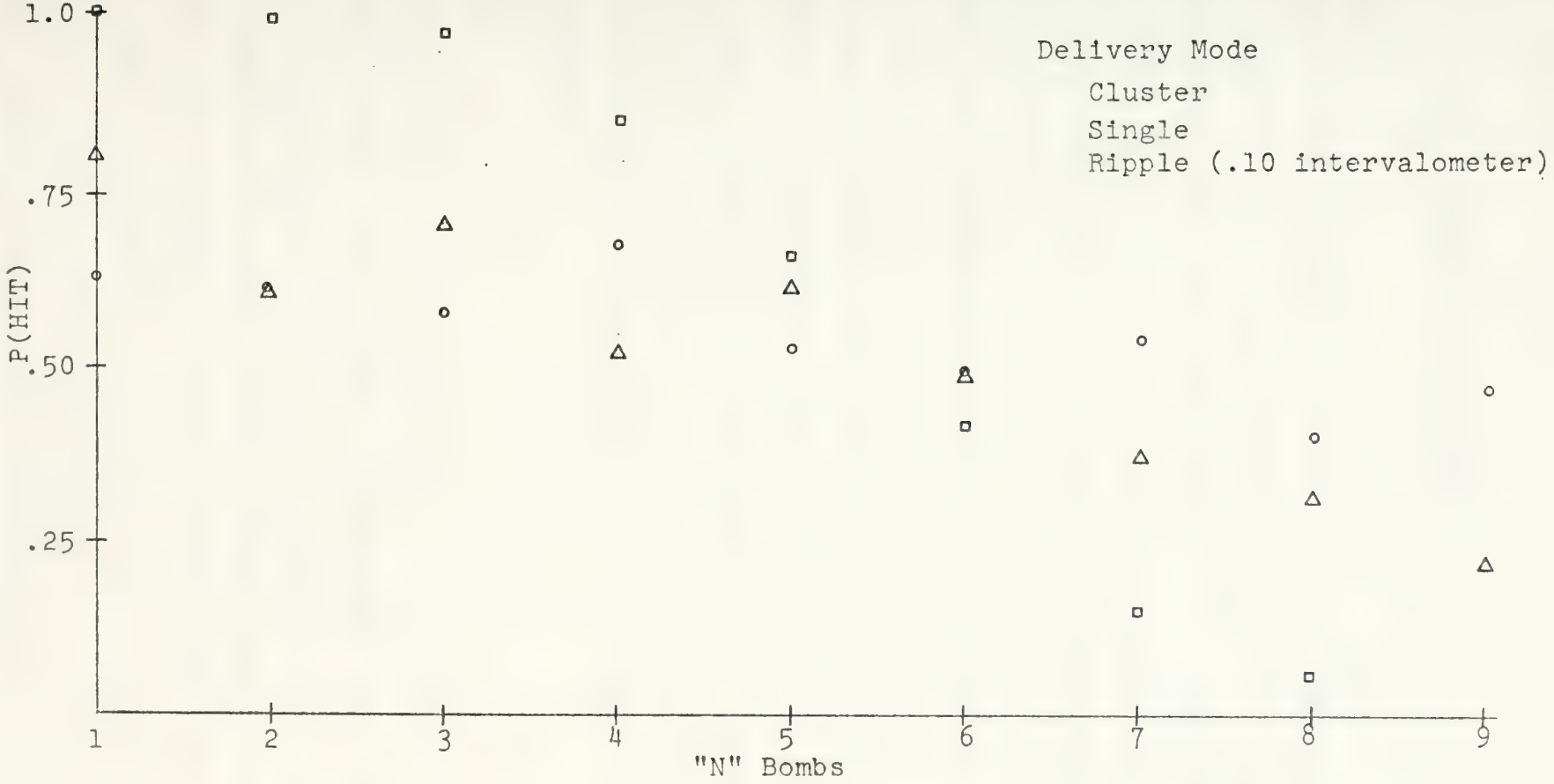


Figure II.B.16.

III. TPQ/MAF MODEL SIMULATION

A. BACKGROUND

A FORTRAN computer program was written to simulate the operation of a Marine Air Support Squadron, MASS, in support of a Marine Amphibious Force, MAF, operation. A MAF consists of a Marine Division, a Marine Air Wing and other supporting forces as described in Ref. 1. Offensive air operations in support of the MAF are controlled by a Direct Air Support Center, DASC, which assigns the ground attack aircraft to attack specific targets. During hours when visual contact with the target cannot be established by the attack aircraft, due to darkness or inclement weather, a ground-based radar directed bombing system is utilized. An ASRT, Air Support Radar Team, site provides a precision tracking radar (PTR), and the associated equipment to conduct ground-based radar bombing missions.

B. SCENARIO

The model is built about a MAF which is established ashore. The MAF has landed across the beachhead and has established seven bases of operations. These bases consist of the beachhead area, which contains the MAF headquarters and the DASC, two firebases which are located away from the beachhead, and four outposts. Each firebase has two of the four outposts located within close proximity of it to provide intelligence reports. A pictorial representation of the basic scenario is provided on Figure III.B.1.

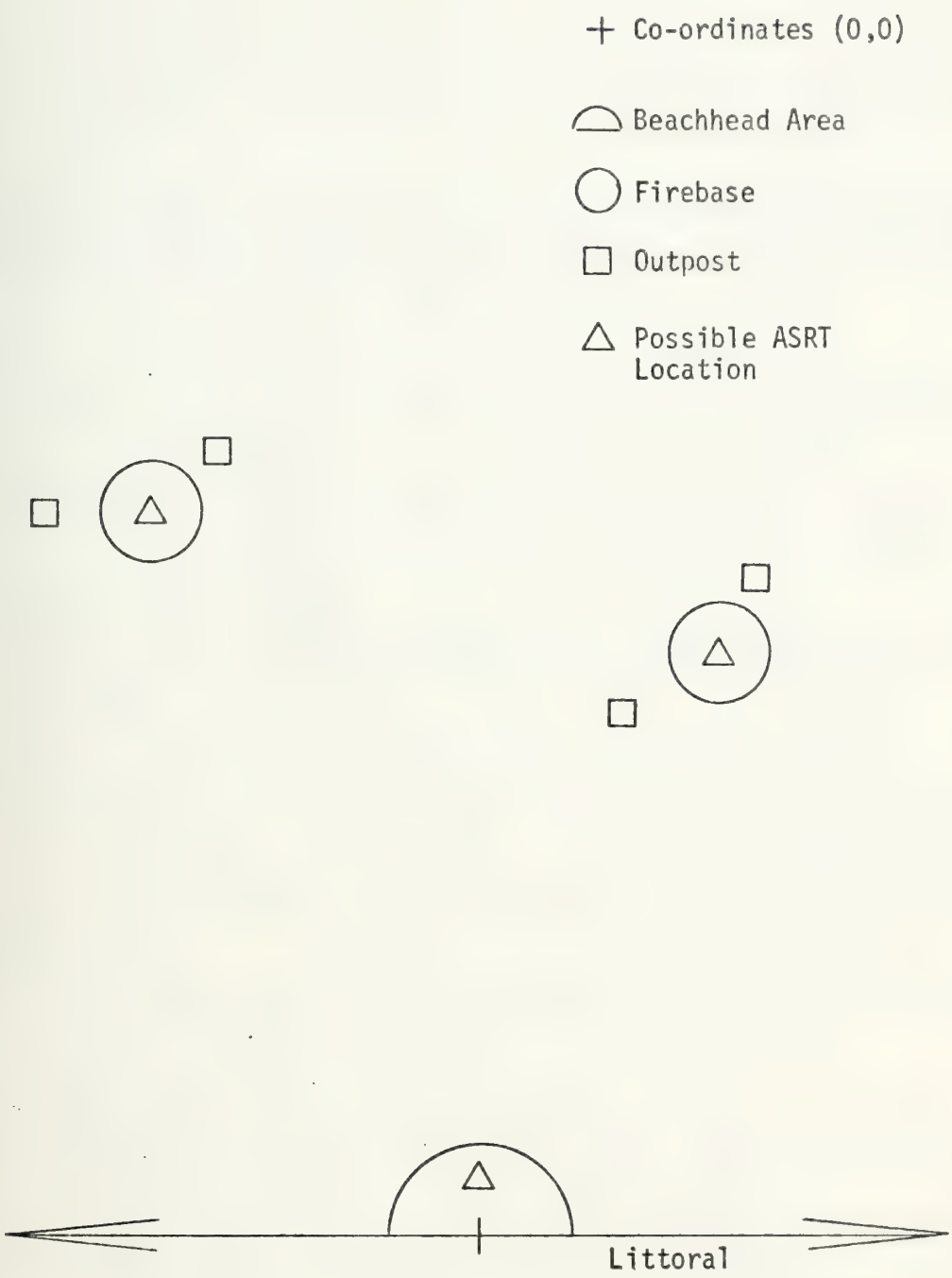


Figure III.B.1

C. THE MODEL

1. Assumptions

The following assumptions were made in the development of the model.

a. The beachhead can be approximated by a straight line running from - infinity to + infinity. The land mass in the problem would encompass all the area clockwise from 270 degrees to 090 degrees.

b. The DASC would be located at the beachhead at co-ordinates (0,0).

c. ASRT's would be located only at the beachhead or at the two firebases.

d. At no time would any one location have more than one ASRT assigned to it.

e. All of the targets enccuntered would be approximated as circular targets.

f. All targets attacked would be attacked under conditions requiring ground-based radar control of the strike aircraft.

g. Each target would be attacked a maximum of once.

h. There would be no system failures.

i. All bomb drops would be performed in the automatic mode.

j. The seven Marine bases of operations, and other sources would provide target information to the DASC throughout the day.

k. That at the start of the simulation the DASC would have a list of targets to attack.

l. Attack aircraft would report into the DASC at co-ordinates (0,0).

m. Interarrival times between aircraft would be randomly distributed between one and nine minutes.

n. Aircraft would have from 30 to 120 minutes available in which to perform their mission.

o. All aircraft are equipped to conduct a completely automatic bomb drop.

p. None of the aircraft would suffer systems failures.

q. The DASC would immediately assign a reporting aircraft to a target for attack and to an ASRT team for radar control.

r. The DASC would assign the aircraft to the target with the highest priority rating.

s. The DASC would assign the aircraft to the ASRT site which would give the smallest CEP for the mission.

t. The DASC would instruct the aircraft to take up a heading directly to its assigned target.

u. Once assigned to a target and a site the mission parameters of the aircraft would not be changed.

v. Target location error would be zero for all targets.

2. Operation of the Model

a. Inputs

Inputs to the model include targets, aircraft, location and number of friendly bases of operations and the number, type and location of the ASRT's.

The land mass was divided up into four different regions for the generation of targets. These regions were designated target regions A, B, C, and D. The physical boundaries of these regions are listed below.

1. Target Region A includes all area within 25 miles of a firebase and all area within 3 miles of an outpost.
2. Target Region D includes all land within 25 miles of the beachhead.
3. Target Region B includes all land within 125 miles of the beachhead which is not in target region A or D.
4. Target Region C includes all land greater than 125 mil s from the beachhead that is not in target region A.

A pictorial representation of the targets regions is given in Figure III.C.1.

The proportion of the total targets located in any particular target region is determined by input parameters. Additionally for target region A the percentage of the A region targets in any one of the six possible areas that make up target region A is also determined by inputs to the model.

Target Region C

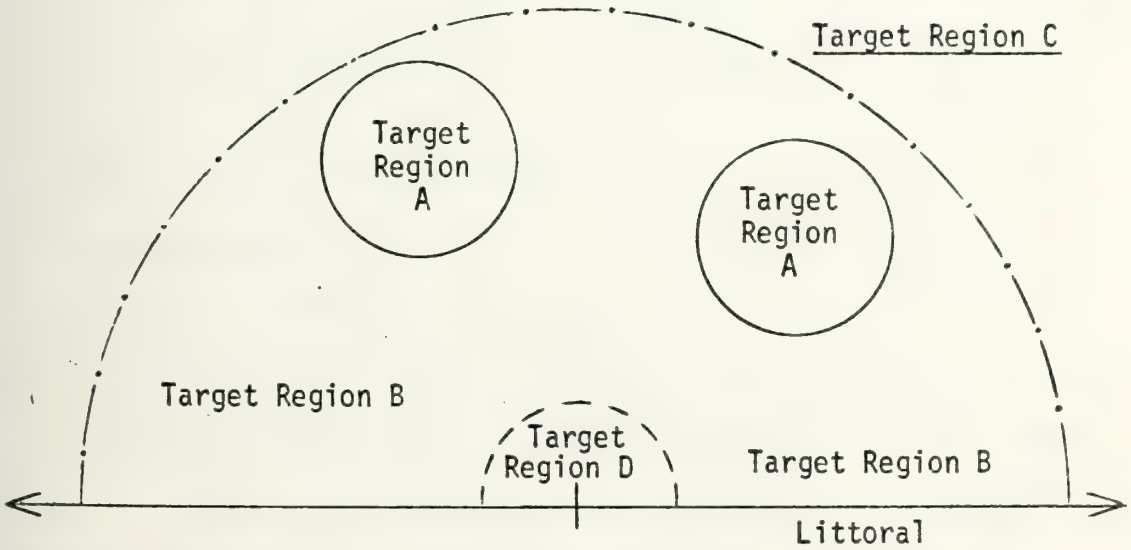


Figure III.C.1.

III.C.1

The capacity for four different target types and five different priorities was provided in the model. Different target types are identified by different target radii. Target types and target priorities were assigned to a target on the basis of which target region the target was located in. Higher priorities were assigned to targets in regions A and D because of their proximity to friendly forces. The allocation of target types and priority types to the target regions is indicated in the following table.

		# of diff tgt types	possible priorities
Target Region	A	4	1,2,3
	B	4	4
	C	2	5
	D	1	1,2,3

Each target generated will have associated with it

1. a target number
2. a X,Y co-ordinate
3. a number indicating the target type
4. a number indicating the priority for attack
5. a time when the target would be reported to the DASC

The number of aircraft which will be generated in the simulation is an input parameter. The capability to define ten different aircraft types was provided for in the program. Different aircraft types are defined by specifying varied bomb loads, aircraft speeds and aircraft altitudes in

an input matrix. The percentage of each type of aircraft which would be generated during the simulation is set by the program utilizer.

b. Interactions Within the Model

Initially in the program the aircraft and all of the targets which will be utilized are generated and identifying information for them is tabulated. The model utilizes three event times to determine the chain of events that takes place. The three event times utilized are the time the next ordnance drop takes place, the time the next aircraft reports into the DASC, and the time that the next target is added to the Targets Reported List. If the next ordnance drop (mission execution) is scheduled to take place prior to the next aircraft reporting in then the model calculates the CEP for that mission and calls the bomb dropping subprogram for execution of that mission. If the next aircraft is scheduled to report into the DASC first then the model determines if any targets should have been added to the Targets Reported List since the last aircraft checked in. If targets should have been added to the list then the model adds those targets and then calls the assignment subprogram where a mission is constituted. A mission consists of an aircraft assigned to a target, the aircraft target combination assigned to an ASRT site, and the associated event times for the mission. If no targets are to be added then the model goes directly to the assignment subprogram.

The assignment portion of the model handles the assignment of the aircraft to the target and the assignment of the aircraft target combination to the controlling facility. The assignment subprogram considers only those targets that are on the Targets Reported List and are also classified as "available". A target could be on the Targets Reported List and not be available for attack for any one of four reasons. The target could already be assigned to another aircraft for attack, the target could already have been attacked, it could have been previously determined that the target could not be attacked due to range restrictions of the ground-based radar sites, or it could have been previously determined that the target could not be attacked by this particular aircraft due to fuel constraints of the aircraft. Targets on the Targets Reported List are designated for attack on a modified FIFO basis. Targets are assigned to missions on a first reported first attacked basis except that reported targets of a higher priority rating are attacked prior to those of lower priority ratings.

Once a mission is established the assignment subprogram calculates event times for the mission. These times are the time at which the aircraft first comes under precision control by the controlling facility (ASRT), the time at which the aircraft drops its ordnance and thus no longer requires precision control, and the total mission time for the aircraft. Once these values are calculated and it has been determined that the time available constraint of

the aircraft has not been violated the mission is placed in the queue which is associated with the particular controlling facility. The queue for a controlling facility consists of those missions which have been assigned to that facility but have not been executed yet (A mission being executed when the aircraft drops its ordnance.). The location of the mission in the queue is determined by comparing the time period during which this mission requires the services of the precision tracking radar of the controlling facility to the time periods which the other missions already in the queue require these services. If the time at which the new mission first requires precision control is earlier than the time at which one of the missions already in the queue first requires the precision tracking radar then this new mission can be placed ahead of that old mission in the queue. However, once a mission is placed in a queue the event times for that mission will not be changed. Therefore, if inserting this mission into the queue would interfere with the time requirements of any other mission that is already in the queue then this mission's event times will be changed.

The bomb dropping portion of the model is covered in Chapter II.

A simplified flow chart of the model is presented in Figure III.C.2. A detailed flow chart of the model is provided in Appendix B and a computer listing is provided in Appendix F.

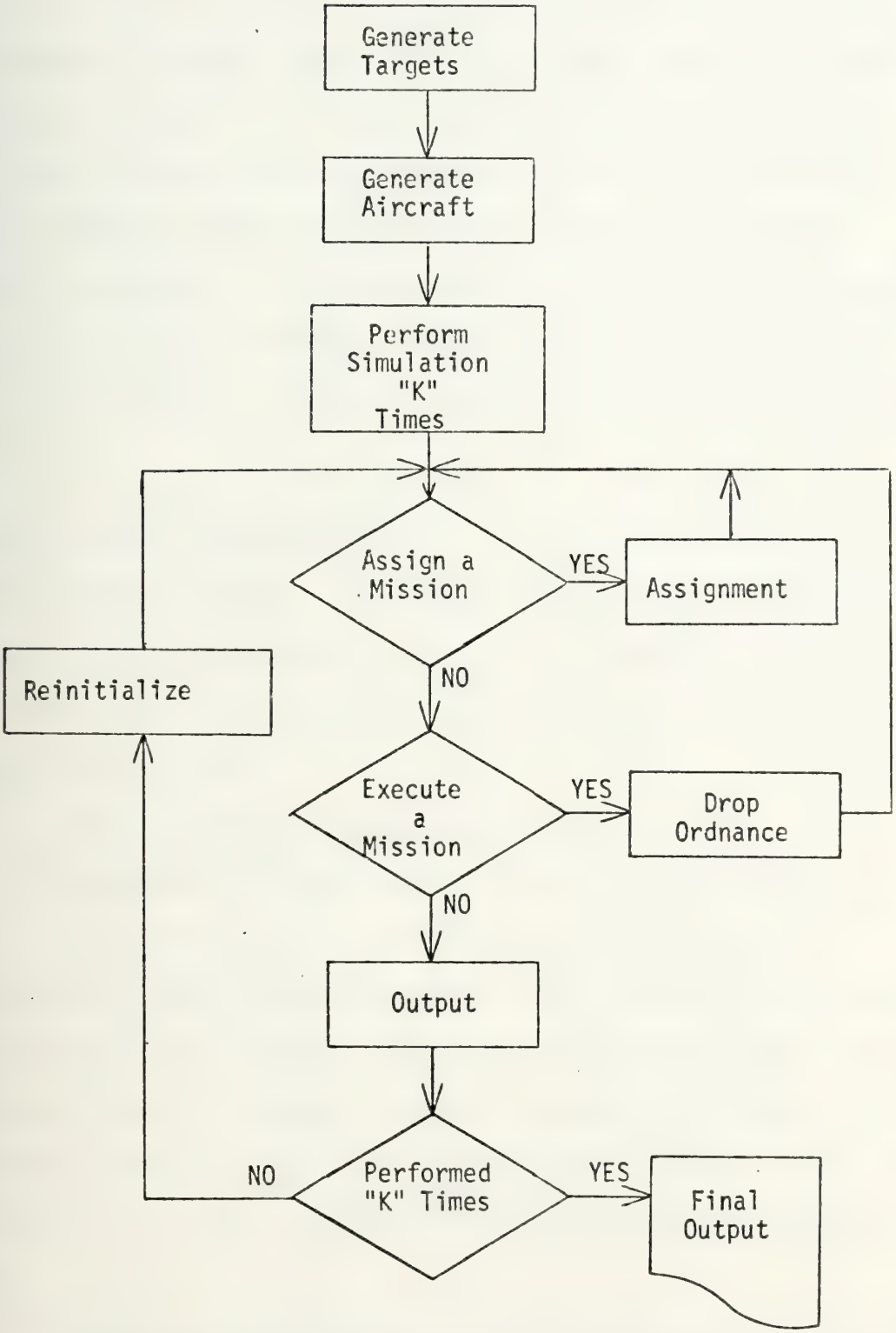


Figure III.C.2.

c. Outputs of the model

As a measure of effectiveness the model used the number of targets hit out of the total number of targets that were attacked. A target was considered to have been hit if one or more bombs fell within the circle described by the targets radius. The model outputs the number of targets successfully attacked and the total number of targets attacked for each repetition of the simulation. A description of the setups considered and an analysis of the results follows.

D. DESIGN FOR SIMULATION RUNS

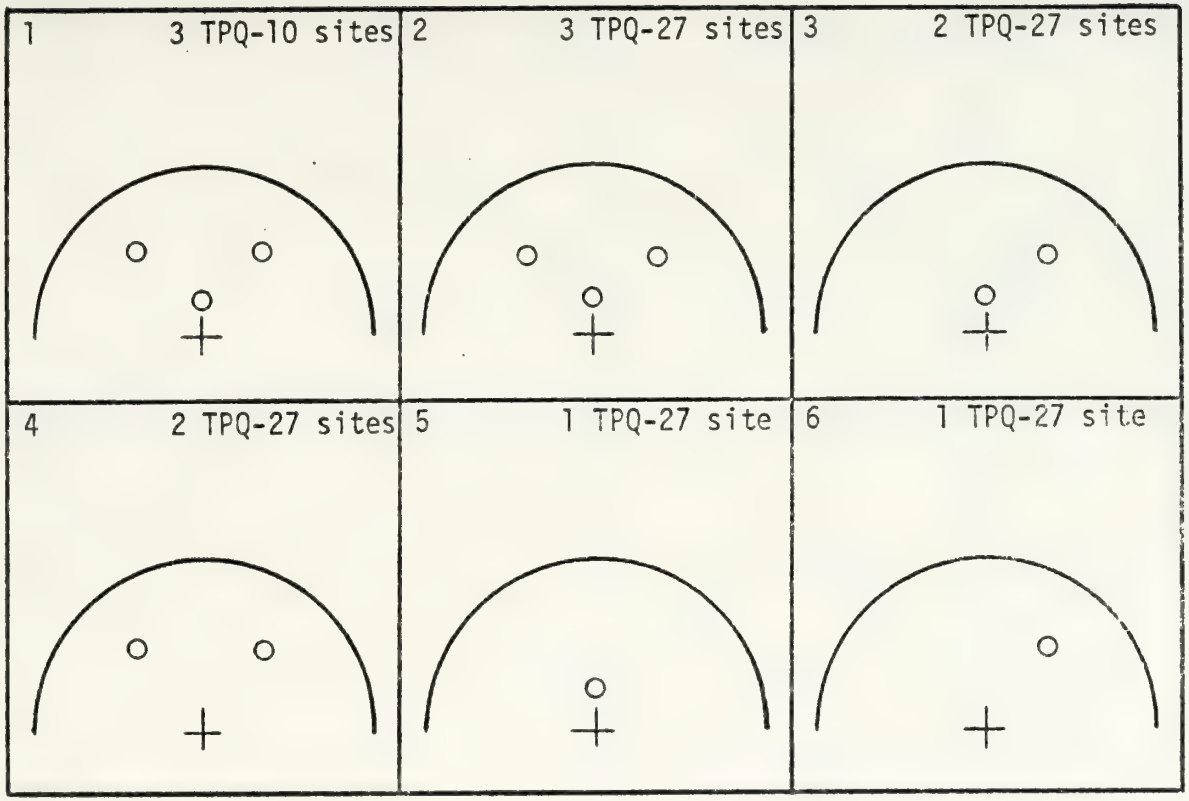
To reach meaningful conclusions about the relative performance of the TPQ-10 and the TPQ-27, various set-ups of three, two and one TPQ-27 site were compared to set-ups of three TPQ-10 sites.

1. What TPQ Set-ups are Examined?

Fourteen different TPQ site set-ups are examined. Figure II.D.1 shows set-up numbers one through six and Figure II.D.2 shows set-up numbers seven through fourteen. Three simulation runs were made for each set-up using three different mixes of target sizes, resulting in a total of 42 simulation runs. Set-ups (1) and (7) use three TPQ-10 sites. The remaining 12 set-ups use various combinations of TPQ-27 sites.

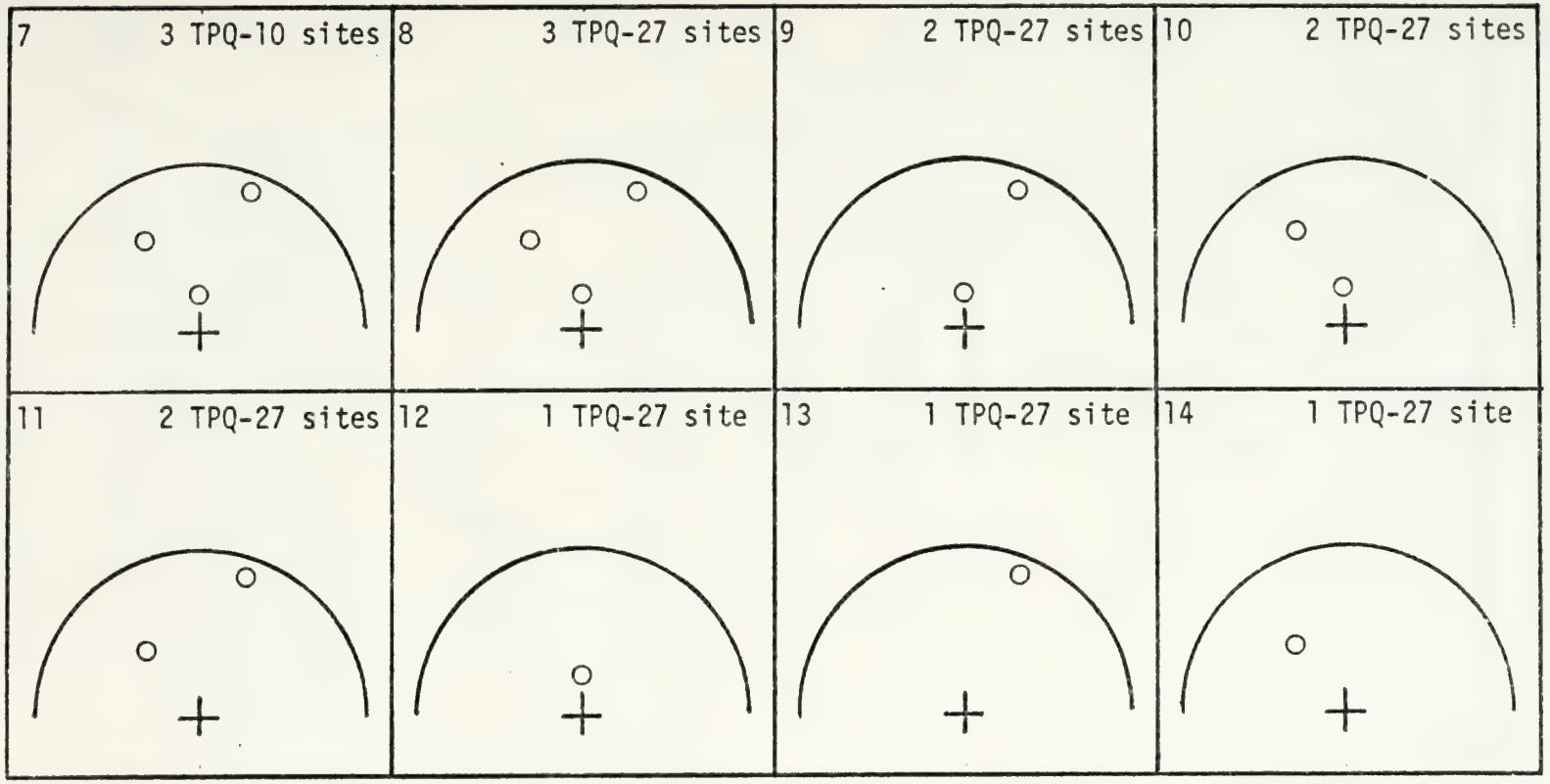
2. Number of Repetitions of the Simulation For each Set-up

Each simulation is repeated 20 times. The random bomb impact points are different for each of the 20 repetitions.



o = site locations

Figure III.D.1. Model with TPQ set-ups 1 through 6



o = site locations

Figure III.D.2. Model for TPQ Set-ups 7 through 14

The expected number of targets hit is estimated from the results of these 20 repetitions.

Twenty trials was considered sufficient for the results to be accurate. A confidence interval for the mean is shown on page 103 of Ref. 8 to be

$$\mu_y = \bar{y} \pm t_{\frac{\alpha}{2},n-1} \times \frac{s}{n} ,$$

where

μ_y = true mean

$\bar{y}$ = sample mean = $\frac{\Sigma y_i}{n}$

α = confidence coefficient

$t_{\frac{\alpha}{2},n-1}$ = $100\ \frac{\alpha}{2}$ percentage point of the t distribution with n-1 degrees of freedom

s = sample standard deviation = $\frac{\Sigma(y_i - \bar{y})^2}{n-1}$.

Of the 42 simulation runs, each of which was repeated 20 times, the largest standard deviation in the number of targets hit was 3.4. The 95 percent confidence interval for the number of targets hit for this run is

$$\mu_y = \bar{y} \pm t_{.025,19} \times \frac{3.4}{20} = \bar{y} \pm 1.59 .$$

Thus in the worst case, where the standard deviation is the largest, the probability of the true mean being within 1.59 meters of the sample mean is .95.

3. Method of Comparison

The comparative effectiveness of m TPQ-27 sites and three TPQ-10 sites was based on the two sample t test. It is assumed that the mean number of hits is approximately a normal random variable because it is the sum of 20 independent random variables (divided by the constant 20).

a. Testing Procedure

For the test, the statistic used, from Ref. 20, is

$$T = \frac{\bar{x} - \bar{y}}{\left(\frac{S_x^2 + S_y^2}{n}\right)}$$

and the number of degrees of freedom, f, is

$$f = \left[1 + \frac{2S_x^2 S_y^2}{S_x^2 + S_y^2}\right] \times n \quad .$$

The testing procedure is shown below. μ_x is the expected number of targets hit in the TPQ-10 set-up and μ_y is the expected number of targets hit in the TPQ-27 set-ups.

1. If the desired comparison is to test whether or not the two systems perform equally, then the hypothesis tested is

$$H_o : \mu_x = \mu_y$$

$$H_1 : \mu_x \neq \mu_y$$

The test statistic T is then calculated using the above formula. The decision rule is to reject H_o at a 95 percent level of significance if T is greater than $t_{.975,f}$ or less than $t_{.025,f}$.

2. If the desired comparison is to test whether or not the TPQ-10 set-up can be expected to hit more targets than the TPQ-27 set-up, then the test is

$$H_o : \mu_x \leq \mu_y$$

$$H_1 : \mu_x > \mu_y$$

T is calculated in the same manner as above. The decision is to reject H_o at a 95 percent level of significance if T is greater than $t_{.95,f}$.

3. If the desired comparison is to test whether or not the TPQ-27 set-up can be expected to hit more targets than the TPQ-10, then the test is

$$H_o : \mu_x \geq \mu_y$$

$$H_1 : \mu_x < \mu_y$$

T is calculated as above. The decision rule is to reject the null hypothesis at the 95 percent level of significance if T is less than $t_{.05,f}$.

b. Confidence Interval For The Difference In Means

If the null hypothesis is $H_o : \mu_x = \mu_y$ and the test results in the decision to accept H_o, then a confidence interval for the difference between μ_x and μ_y is desirable. Ref. 11 shows that the 95 percent confidence interval is

$$(\mu_x - \mu_y) = (\bar{x} - \bar{y}) \pm d \quad ,$$

where

$$d = \frac{S_x^2 + S_y^2}{n} \times t_{.975,2n-2}$$

s_x = standard deviation of the number of targets hit for the TPQ-10 set-up.

s_y = standard deviation of the number of targets hit for the TPQ-27 set-up.

n = number of trials.

E. RESULTS

The results of the simulation runs are used to make conclusions about the comparative effectiveness of the TPQ-27 and the TPQ-10.

1. Output of Simulation Runs

The computer output of the simulation runs is in Appendix D. Each page shows the results of 20 trials, and the mean and standard deviations of the number of targets

hit. The mean and standard deviation of the total number of bombs hitting the target are also shown. There are 42 pages corresponding to the 42 different simulation runs. Table III.D.1 and Table III.D.2 show these results for each TPQ set-up and target mix and also give the page number in Appendix D which contains the results for that particular simulation run.

2. Comparison of Results

The performance of three TPQ-10's operating in set-up (1) is compared to the TPQ-27 performance in set-up numbers (2) through (6). The comparison is made for each of three different target mixes. These comparisons are shown in Table III.D.3.

The performance of three TPQ-10's operating in set-up (7) is compared to the TPQ-27 performance in set-up numbers (8) through (14). These comparisons are also made for each of three different target mixes and are shown in Table III.D.4.

Tables III.D.3 and III.D.4 show the null hypothesis, H_o, followed by the decision to reject (R) or accept (A) H_o based on a 95 percent level of significance. The test statistic T is then shown, followed by the critical level $\hat{\alpha}$. $\hat{\alpha}$ is associated with the observed value of T and represents the smallest level of significance at which the null hypothesis would be rejected. For the cases where the null hypothesis that $\mu_x = \mu_y$ is accepted, the value of d which represents one-half of the length of the 95 percent confidence interval about the difference $\mu_x - \mu_y$ is shown.

TPQ SET-UP NUMBER		(1)	(2)	(3)	(4)	(5)	(6)
Target Radius (TR)	Mix	3 TPQ-10's (0, 5) (35,35) (-35,35)	3 TPQ-27's (0, 5) (35,35) (-35,35)	2 TPQ-27's (0, 5) (35,35)	2 TPQ-27's (-35,35) (35,35)	1 TPQ-27 (0, 5)	1 TPQ-27 (35,35)
20	25%	p. 242	p. 243	p. 244	p. 245	p. 246	p. 247
40	25%	42	44.3	42.9	42.5	40.75	38.3
60	25%						
80	25%	2.2	1.8	2.0	2.0	2.5	2.7
20	50%	p. 248	p. 249	p. 250	p. 251	p. 252	p. 253
40	50%	39.4	42.6	40.15	40.8	35.75	34.6
60	50%	3.2	2.3	2.8	2.5	3.4	2.9
80	50%	p. 254	p. 255	p. 256	p. 257	p. 258	p. 259
		44.9	45.95	45.45	43.45	45.15	41.55
		1.9	1.8	1.8	1.8	2.3	2.5

Table III.D.1. Table entries are
1) page number in Appendix D with simulation output
2) mean number of targets hit
3) standard deviation of mean number of targets hit.

TPQ SET-UP NUMBER		(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Target Radius (TR)	Mix	3 TPQ-10's (0, 5) (-35,35) (35,70)	3 TPQ-27's (0, 5) (-35,35) (35,70)	2 TPQ-27's (0, 5) (35,70)	2 TPQ-27's (0, 5) (-35,35)	2 TPQ-27's (35,70) (-35,35)	1 TPQ-27 (0, 5)	1 TPQ-27 (35,70)	1 TPQ-27 (-35,35)
20	25%	p. 260	p. 261	p. 262	p. 263	p. 264	p. 265	p. 266	p. 267
40	25%	41.9	44.15	43.15	39.6	41.1	38.05	34.9	35.45
60	25%	1.9	1.8	2.1	3.0	2.0	3.1	2.6	3.2
80	25%								
20	50%	p. 268	p. 269	p. 270	p. 271	p. 272	p. 273	p. 274	p. 275
40	50%	39.2	42.4	40.3	34.0	39.2	31.15	30.9	30.0
60	50%	2.9	2.3	2.7	2.8	2.4	3.2	2.7	3.1
80	50%	p. 276	p. 277	p. 278	p. 279	p. 280	p. 281	p. 282	p. 283
		44.35	45.95	45.4	43.0	42.7	43.1	37.95	39.05
		1.9	1.8	1.8	2.4	1.7	2.4	2.2	3.1

Table III.D.2. Table entries are
(1) page number in Appendix D with simulation output
(2) mean number of targets hit
(3) standard deviation of mean number of targets hit

Target Radius	Mix	TPQ-27 SET UP NUMBER				
		(2)	(3)	(4)	(5)	(6)
20 40 60 80	25% 25% 25% 25%	$H_o: \mu_y \leq \mu_x$ Reject $T = -3.62$ $\hat{\alpha} < .0005$	$H_o: \mu_y = \mu_x$ Accept $T = -1.35$ $\hat{\alpha} \simeq 0.2$ $d = 1.34$	$H_o: \mu_y \leq \mu_x$ Reject $T = -2.26$ $\hat{\alpha} \simeq 0.02$	$H_o: \mu_y = \mu_x$ Accept $T = +1.68$ $\hat{\alpha} \simeq 0.1$ $d = 1.5$	$H_o: \mu_y \geq \mu_x$ Reject $T = +4.74$ $\hat{\alpha} < .0005$
20 40	50% 50%	$H_o: \mu_y \leq \mu_x$ Reject $T = -3.64$ $\hat{\alpha} < .0005$	$H_o: \mu_y = \mu_x$ Accept $T = -0.75$ $\hat{\alpha} \simeq 0.06$ $d = 1.9$	$H_o: \mu_y = \mu_x$ Accept $T = -1.54$ $\hat{\alpha} \simeq 0.06$ $d = 1.84$	$H_o: \mu_y \geq \mu_x$ Reject $T = +3.54$ $\hat{\alpha} \simeq .0005$	$H_o: \mu_y \geq \mu_x$ Reject $T = +4.95$ $\hat{\alpha} < .0005$
60 80	50% 50%	$H_o: \mu_y \leq \mu_x$ Reject $T = -1.79$ $\hat{\alpha} \simeq 0.04$	$H_o: \mu_y = \mu_x$ Accept $T = -0.92$ $\hat{\alpha} \simeq 0.25$ $d = 1.2$	$H_o: \mu_y = \mu_x$ Accept $T = +1.62$ $\hat{\alpha} \simeq 0.12$ $d = 1.18$	$H_o: \mu_y = \mu_x$ Accept $T = -0.37$ $\hat{\alpha} \simeq 0.2$ $d = 1.35$	$H_o: \mu_y \geq \mu_x$ Reject $T = +4.77$ $\hat{\alpha} < .0005$

Table III.D.3. Comparison of 3 TPQ-10's at (0,5), (35,35), (-35,35) with TPQ-27 set-ups (2) through (6).

Target Radius	Mix	TPQ-27 SET UP NUMBER						
		(8)	(9)	(10)	(11)	(12)	(13)	(14)
20	25%	$H_o: \mu_y \leq \mu_x$ Reject	$H_o: \mu_y \leq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y = \mu_x$ Accept	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject
40	25%	T = -3.8	T = -1.95	T = +2.9	T = +1.3	T = +4.72	T = +9.72	T = +7.23
60	25%	$\hat{\alpha} < .0005$	$\hat{\alpha} \simeq 0.04$	$\hat{\alpha} < .005$	$\hat{\alpha} \simeq 0.2$	$\hat{\alpha} < .0005$	$\hat{\alpha} < .0005$	$\hat{\alpha} < .0005$
80	25%				d = 1.25			
20	50%	$H_o: \mu_y \leq \mu_x$ Reject	$H_o: \mu_y = \mu_x$ Accept	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y = \mu_x$ Accept	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject
		T = -3.85	T = -1.24	T = +5.78	T = 0	T = +8.33	T = +9.38	T = +9.68
40	50%	$\hat{\alpha} < .0005$	$\hat{\alpha} \simeq 0.2$ d = 1.79	$\hat{\alpha} < .0005$	$\hat{\alpha} = 0.5$ d = 1.7	$\hat{\alpha} < .0005$	$\hat{\alpha} < .0005$	$\hat{\alpha} < .0005$
60	50%	$H_o: \mu_y \leq \mu_x$ Reject	$H_o: \mu_y \leq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject	$H_o: \mu_y \geq \mu_x$ Reject
		T = -2.71	T = -1.795	T = +1.99	T = +2.89	T = +1.84	T = +9.8	T = +6.52
80	50%	$\hat{\alpha} < .005$	$\hat{\alpha} \simeq 0.04$	$\hat{\alpha} \simeq 0.025$	$\hat{\alpha} < .005$	$\hat{\alpha} \simeq 0.035$	$\hat{\alpha} < .0005$	$\hat{\alpha} < .0005$

Table III.D.4. Comparison of 3 TPQ-10's at (0,5), (35,70), (-35,35), with TPQ-27 set-ups (8) through (14).

F. CONCLUSIONS

Two questions were proposed as the basis for the investigations undertaken in the simulation of the model. Answers to these questions can now be presented in terms of the expected number of targets hit as the measure of effectiveness.

1. How Do the TPQ-27 and the TPQ-10 Compare?

Set-up (1) used three TPQ-10 sites at the same locations as the three TPQ-27 sites in set-up (2). Set-up (7) used three TPQ-10 sites at the same locations as the three TPQ-27 sites in set-up (8). To answer this question, then, set-ups (1) and (7) are compared to set-ups (2) and (8), respectively.

Column 2 in Table III.D.3 shows that for all three different target mixes, the expected number of targets hit by the TPQ-27 set-up, μ_y, was greater than the expected number hit by the TPQ-10 set-up, μ_x. This plus similar results shown in column 8 of Table III.D.4 make it apparent that the TPQ-27 can be expected to hit more targets than the TPQ-10 for all mixes of targets used. Since the critical region determined by $\hat{\alpha}$ is larger for the target mix of 50 percent 60m, 50 percent 80m targets in both cases, it appears that the amount by which the TPQ-27 is more effective than the TPQ-10 decreases for larger targets. These conclusions only confirm what would be expected. The new system with the better CEP is more effective than the old TPQ-10 system when

both systems operate in the same environment. And this margin of increased effectiveness decreases for larger targets.

2. Can the TPQ-27 Replace the TPQ-10 On Other Than a One For One Basis?

The performance of three TPQ-10's, set-ups (1) and (7), using expected values of the number of targets hit as the measure of effectiveness, was compared to the performance of various set-ups of two and one TPQ-27 sites. Specifically, set-up (1) was compared with each of set-up numbers (3) through (6), and set-up (7) was compared to each of set-up numbers (9) through (14). The results of the two-sample t test which was used to make conclusions on the comparability of the systems, are shown in Tables III.D.3 and III.D.4.

The results show that in some specific tactical situations two TPQ-27's can perform at least as well as three TPQ-10's. For three friendly firebases located within 50nm of the beachhead, with one of the firebases at the beachhead, two TPQ-27's located at any two of the three firbases performed at least as effectively as three TPQ-10's, one located at each of the three firebases. Also, one TPQ-27 performed as well as three TPQ-10's against larger targets, but not against smaller targets.

When the three firebases are spread out so that the distance between the beachhead and one firebase is about 75 nm and the other is about 50nm, only in the case where the two TPQ-27's straddled the third firebase did the TPQ-27 perform as well as three TPQ-10's against all target mixes.

In general if the friendly positions which originate target requests are within about 50nm of the beachhead, then two TPQ-27's can be expected to perform at least as well as three TPQ-10's. As the third firebase is moved out from 50nm to 75nm, the two TPQ-27's lose their capability to perform at least as well as the three TPQ-10's in all cases. Therefore the two TPQ-27's should be located so that they straddle the third firebase. In other words, if the firebase without a TPQ site is in between the two firebases with TPQ sites, then the two TPQ-27 sites can be expected to perform at least as well as three TPQ-10's.

APPENDIX A

COMPUTER PROGRAM FOR BOMB DROPPING MODEL

The bomb dropping model described in Chapter II was written in FORTRAN for simulation on an IBM 360/67 computer. The program listing appears in Appendix E. A flowchart of the program and a detailed description of the program with references to both the flowchart and the program listing appear below.

1. Program Flowchart

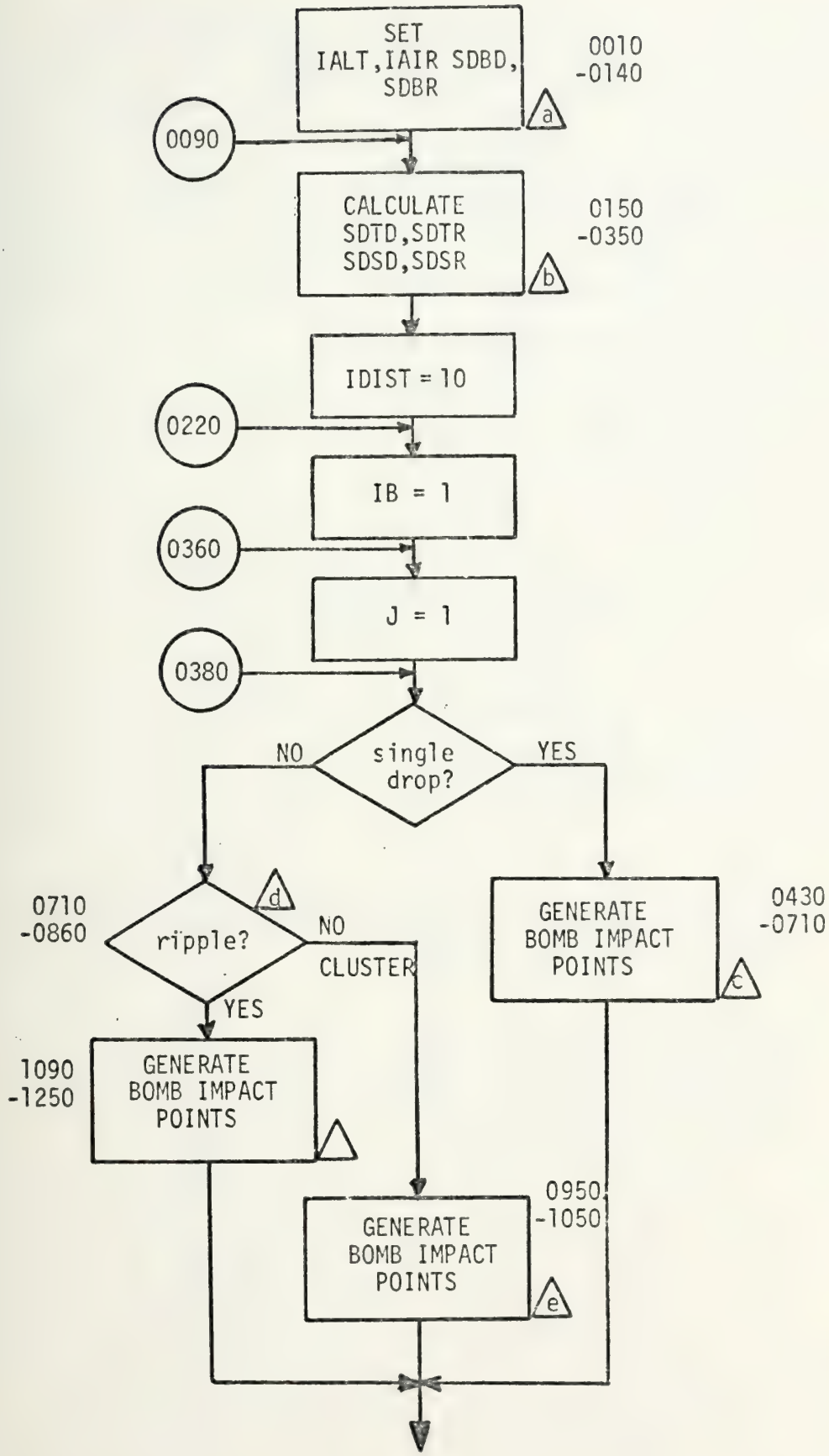
A flowchart of the program listing in Appendix E follows. All four-digit numbers appearing in the flowchart represent the line numbers of the program listing which appear in a column along the right-hand side of the listing. The lower case letters appearing in small triangles "△" refer to paragraph letters in the following section.

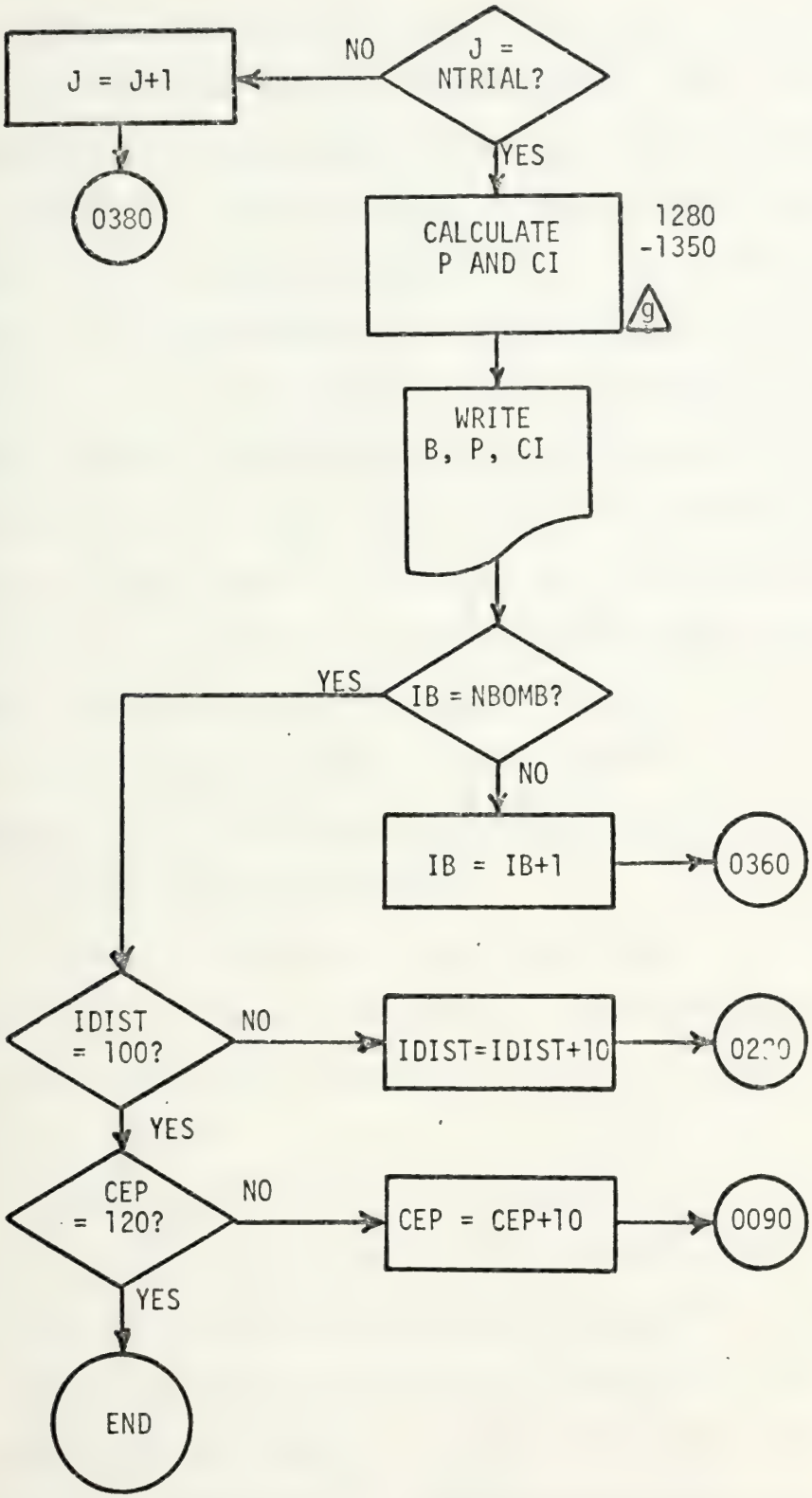
a. This model can drop bombs from either 10000 ft and 300 KTAS or 20000 ft and 500 KTAS. The value of the standard deviations SDBD, SDBR, SDTD, and SDTR are calculated as shown in paragraph 2.A.2.

b. The system related portion of the bombing error can now be calculated in terms of the standard deviations. These system standard deviations, SDSD and SDSR, are calculated directly by subtracting out of the total CEP the ballistic dispersion. Thus

$$SDSD = (SDTD^2 - SDBD^2)^{\frac{1}{2}}$$

$$SDSR = (SDTR^2 - SDBR^2)^{\frac{1}{2}} \quad .$$


SET
IALT,IAIR SDBD,
SDBR
0010
-0140
a
0090
CALCULATE
SDTD,SDTR
SDSD,SDSR
0150
-0350
b
IDIST = 10
0220
IB = 1
0360
J = 1
0380
NO
single
drop?
YES
0710
-0860
d
ripple?
NO
CLUSTER
YES
GENERATE
BOMB IMPACT
POINTS
1090
-1250
GENERATE
BOMB IMPACT
POINTS
0430
-0710
c
0950
-1050
GENERATE
BOMB IMPACT
POINTS
e


J = J+1
NO
J = NTRIAL?
YES
0380
CALCULATE P AND CI
1280 -1350
g
WRITE B, P, CI
YES
IB = NBOMB?
NO
IB = IB+1
0360
IDIST = 100?
NO
IDIST=IDIST+10
0200
YES
CEP = 120?
NO
CEP = CEP+10
0090
YES
END

c. Single drop means that if the bomber has NBOMB bombs, it will drop one bomb at a time NBOMB times. The library function GGNOR generates NN Normal (0,1) random numbers. The MPI is then created and assigned the coordinates (X,Y). Thus X is N(0,SDSD) and Y is N(0,SDSR). The impact point of the bomb itself, (X1,Y1), is then distributed around the MPI with X1 N(0,SDBD) and Y1 N(0,SDBR). If the true target center is (XACT,YACT), (if the target location error ITLOCE is not 0) then (X,Y) is adjusted accordingly. From this the impact point of the bomb can be calculated relative to the center of the target (X2,Y2) where X2=X+X1, and Y2=Y+Y1. Now the distance from the target center to the bomb impact point is just $(X2^2+Y2^2)^{\frac{1}{2}}$. If the distance, DIS, is inside the target radius, TR, then a hit is recorded (ISCORE=ISCORE+1).

d. The MPI relative to the true target center is calculated as in c. above. Because all NBOMB bombs are released on the same run, they will all be distributed around the same MPI.

e. NBOMB bombs are released simultaneously in the cluster mode. The impact point around the MPI, (X1,Y1), is a random point with X1~N(0,SDBD) and Y1~N(0,SDBR). NBOMB points are generated and the distance from each to the target is calculated, and the number of these bombs which fall inside the target radius TR is accumulated by ISCORE.

f. NBOMB bombs are released TIME seconds apart which converts to DIST meters of range displacement between bombs

on the ground. The bomb impact points and target to impact point distance are calculated as in e. above except that for each bomb an adjustment is made to the Y coordinate of the MPI to account for DIST, the ripple effect.

g. The probability of hitting the target can now be calculated. NTRIAL Bernoulli trials have been performed and the sum of the Bernoulli random variable equals IBERN. From Ref. 7 the total number of successes divided by the number of trials is an efficient unbiased estimator of the probability of success in a single trial. In the program P=IBERN/NTRIAL is the estimator. The confidence interval follows from the fact that IBERN which is the sum of NTRIAL Bernoulli trials, has the binomial distribution with mean np and variance of np(1-p). The large sample approximation as shown in Ref. 8 then yields the confidence interval for P.

h. Definitions

The following is a list of the variables used in the program and what they represent.

TIME	intervalometer time setting for ripple drop
NBOMB	number of bombs aboard the aircraft
NTRIAL	number of trials run for each probability
IALT	aircraft altitude in feet
RIPPLE	logical variable set to true if ripple drop false otherwise
SINGLE	logical variable set to true if single drop false otherwise
ITLOCE	target location error in meters
SDBD	standard deviation in deflection due to ballistic dispersion
SDBR	standard deviation in range due to ballistic dispersion

SDTD	the total standard deviation in deflection
SDTR	the total standard deviation in range
CEP	circular error probable
SDSD	standard deviation in deflection due to causes other than ballistic dispersion
SDSR	standard deviation in range due to causes other than ballistic dispersion
IBERN	counting variable in program. For each trial adds 1 to itself if a success is achieved, 0 otherwise. A success is if the number of bombs that hit the target is greater than or equal to B, the number of bombs for which the probability of hitting the target is being calculated.
TETA	angle between 0 and 360 degrees which is randomly generated U(0,360)
XACT	real location of the X target coordinate if the target location error is not zero
YACT	real location of the Y target coordinate if the target location error is not zero
DIS	distance between bomb impact and target center
P	probability of hitting the target
CI	confidence interval around P

APPENDIX B
COMPUTER PROGRAM FOR TPQ/MAF MODEL SIMULATION

The model described in Chapter III was written in FORTRAN for simulation on an IBM 360/67 computer. The program listing appears in Appendix F. A flowchart of the program and a detailed description of the program with references to both the flowchart and the program listing appear below.

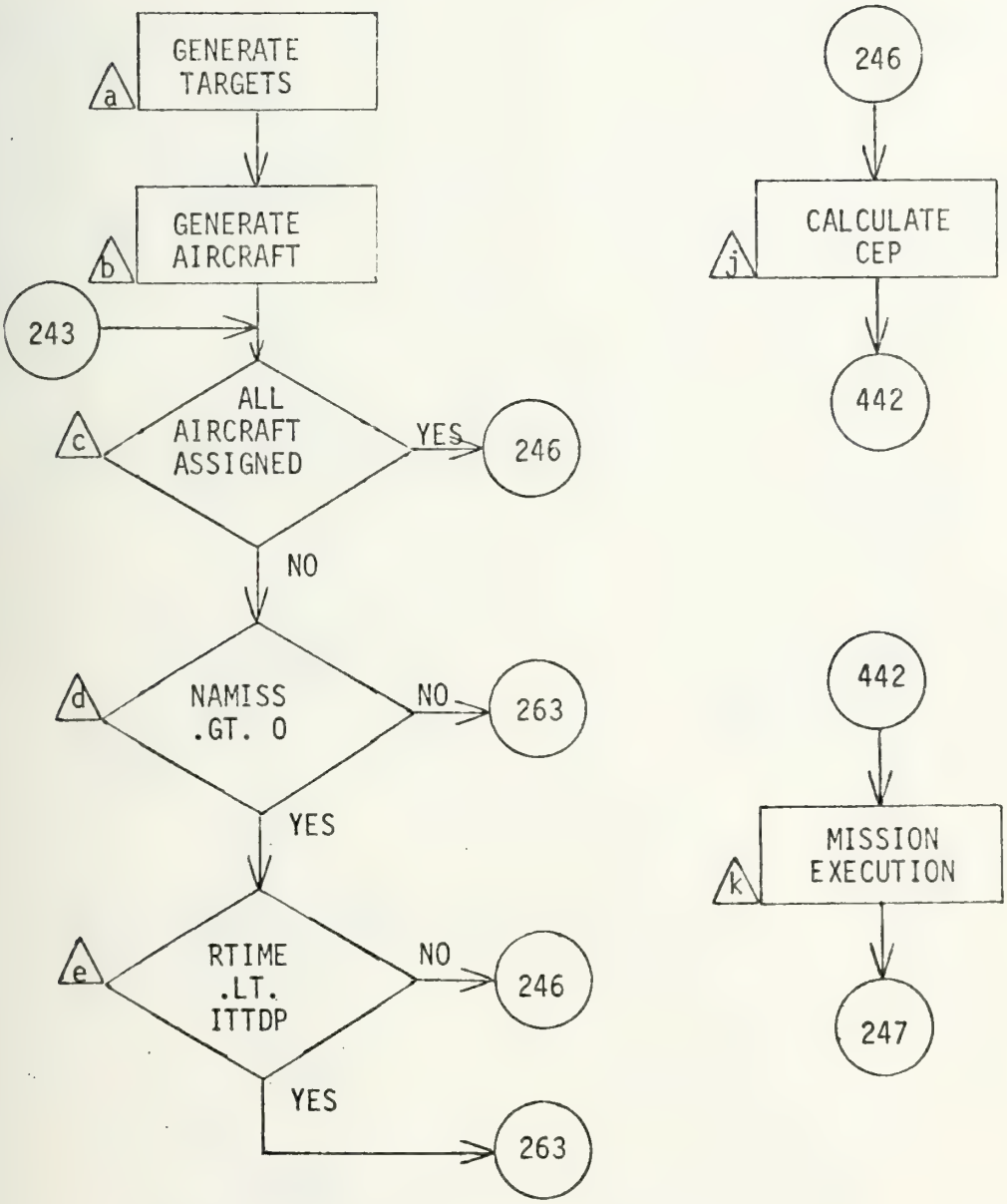
1. Program Flowchart

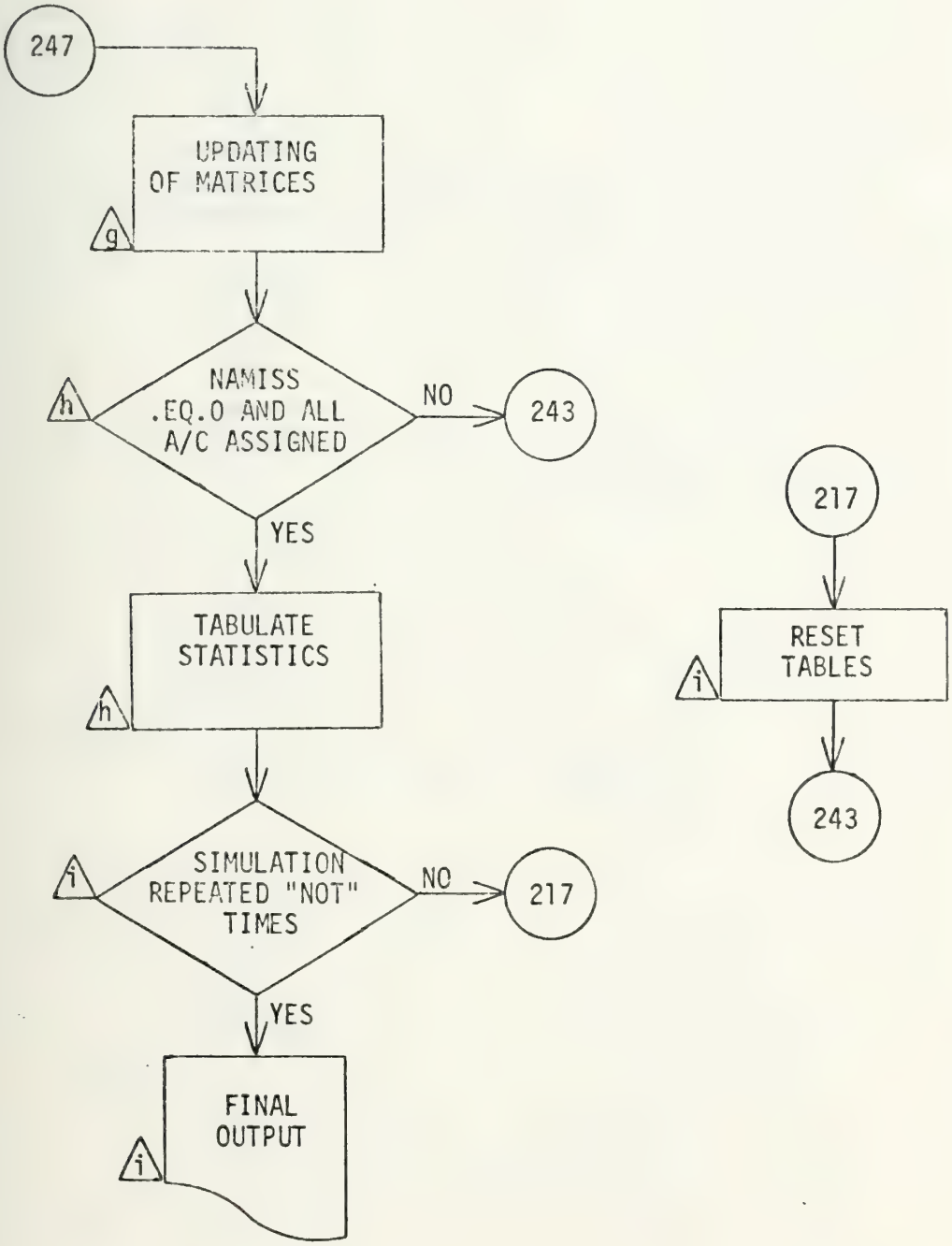
A flowchart of the program listing in Appendix F follows. All four-digit numbers appearing in the flowchart represent the line numbers of the program listing which appear in a column along the right-hand side of the listing. The lower case letters appearing in small triangles "△" refer to paragraph letters in the following section.

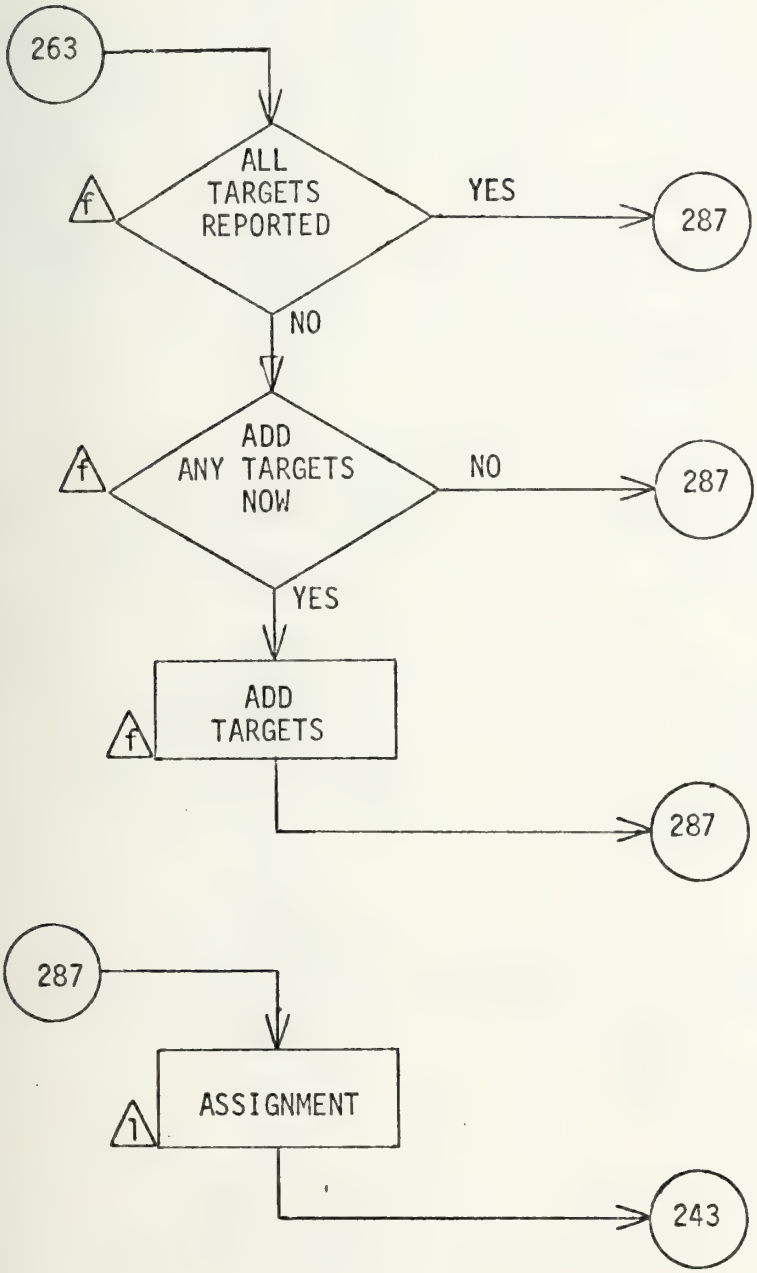
2. Explanation of the Flowchart

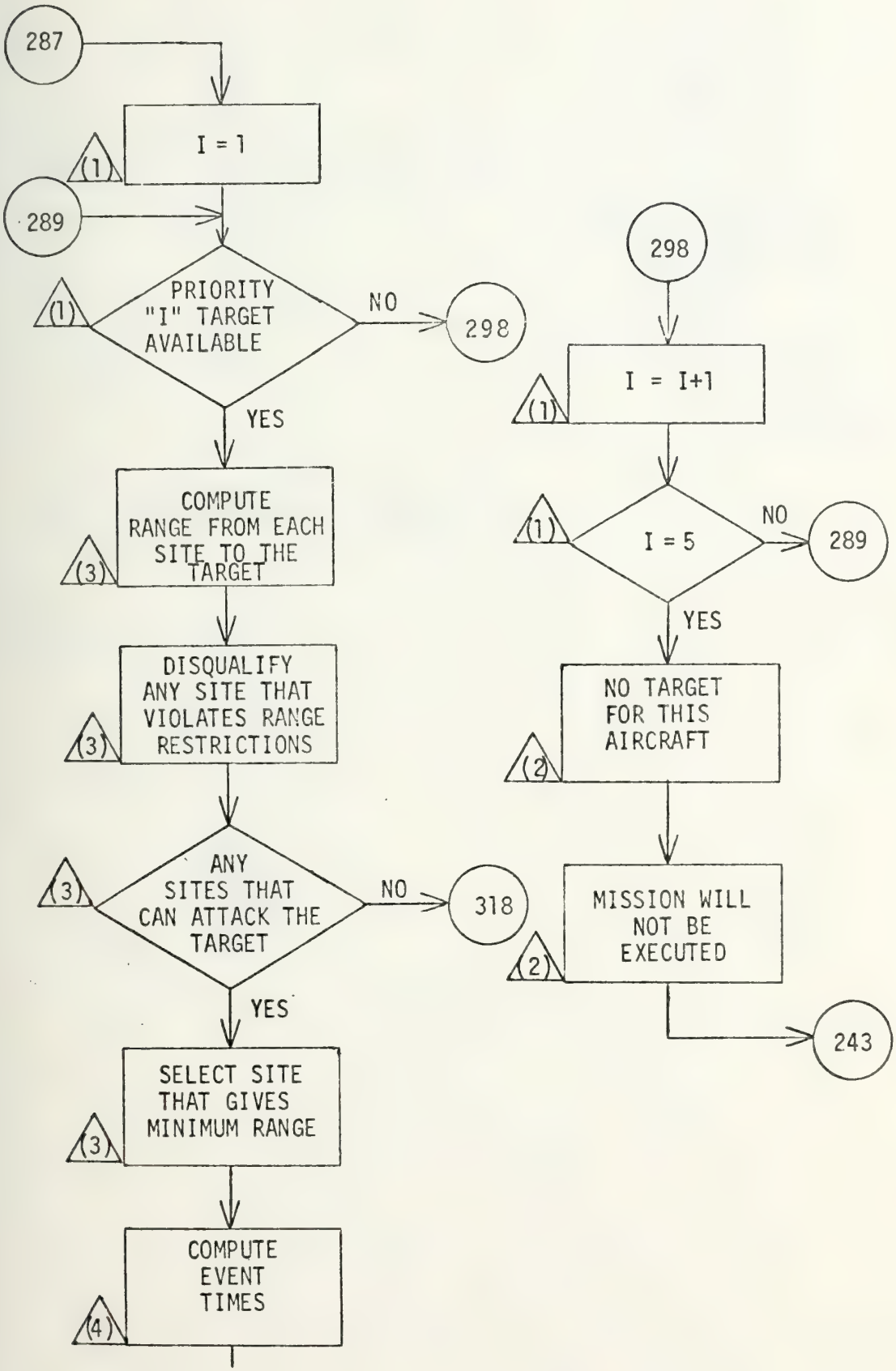
a. Generation of Targets

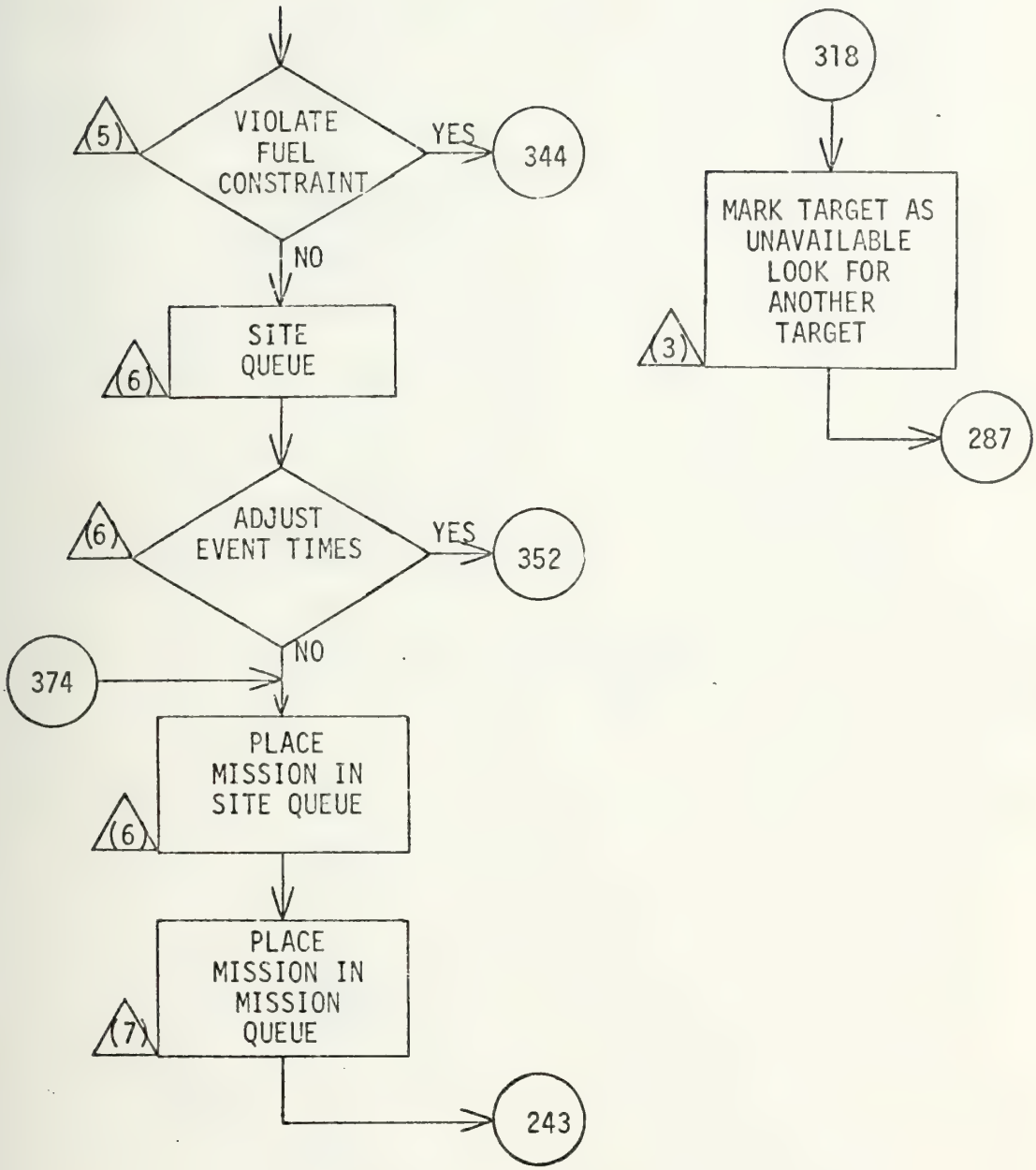
The number of targets that will be generated is set by the input variable ITNTGT. Realizations of a random variable from a U(0,1) distribution are utilized to determine specific characteristics of a given target. Characteristics are determined by comparing realizations of the random number to values in different control matrices. These values are provided by the user. A decision is made concerning the characteristics of the target depending on whether or not the realization is greater than or less than the number to which it is compared. The target characteristics determined are;

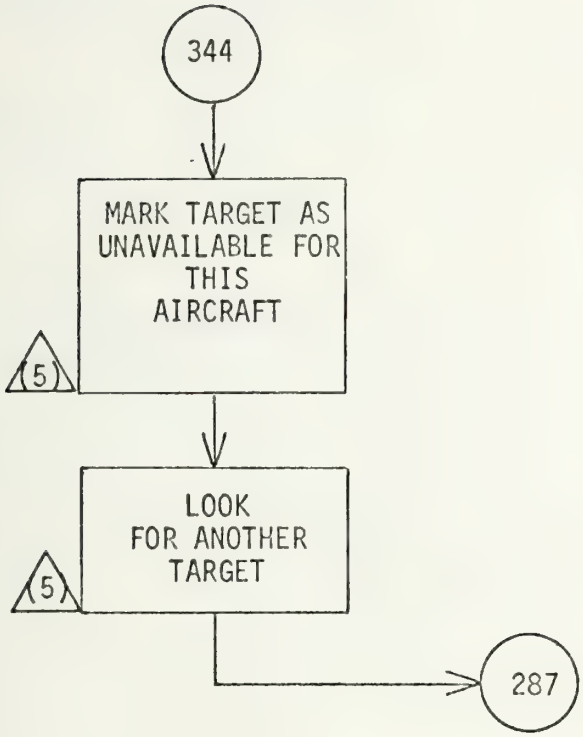

GENERATE TARGETS
a
GENERATE AIRCRAFT
b
243
ALL AIRCRAFT ASSIGNED
c
YES
246
NO
NAMISS .GT. 0
d
NO
263
YES
RTIME .LT. ITTDP
e
NO
246
YES
263
246
CALCULATE CEP
j
442
442
MISSION EXECUTION
k
247

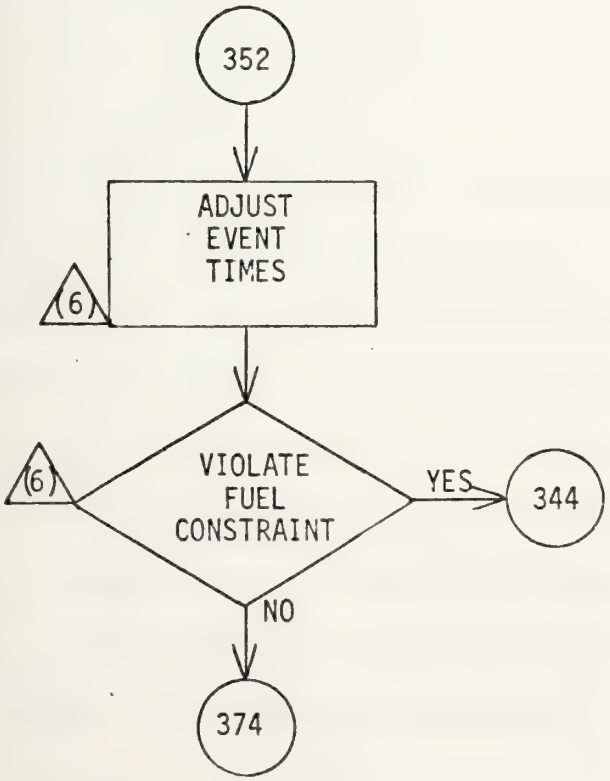

247
UPDATING OF MATRICES
g
NAMISS .EQ.0 AND ALL A/C ASSIGNED
h
NO
243
YES
TABULATE STATISTICS
h
SIMULATION REPEATED "NOT" TIMES
i
NO
217
YES
FINAL OUTPUT
i
217
RESET TABLES
i
243


263
ALL TARGETS REPORTED
f
YES
287
NO
ADD ANY TARGETS NOW
f
NO
287
YES
ADD TARGETS
f
287
287
ASSIGNMENT
1
243


287
I = 1
(1)
289
PRIORITY "I" TARGET AVAILABLE
(1)
NO
298
YES
COMPUTE RANGE FROM EACH SITE TO THE TARGET
(3)
DISQUALIFY ANY SITE THAT VIOLATES RANGE RESTRICTIONS
(3)
ANY SITES THAT CAN ATTACK THE TARGET
(3)
NO
318
YES
SELECT SITE THAT GIVES MINIMUM RANGE
(3)
COMPUTE EVENT TIMES
(4)
298
I = I+1
(1)
I = 5
(1)
NO
289
YES
NO TARGET FOR THIS AIRCRAFT
(2)
MISSION WILL NOT BE EXECUTED
(2)
243


318
MARK TARGET AS UNAVAILABLE LOOK FOR ANOTHER TARGET
(3)
287
(5)
VIOLATE FUEL CONSTRAINT
YES
344
NO
SITE QUEUE
(6)
(6)
ADJUST EVENT TIMES
YES
352
NO
374
PLACE MISSION IN SITE QUEUE
(6)
PLACE MISSION IN MISSION QUEUE
(7)
243


344
MARK TARGET AS UNAVAILABLE FOR THIS AIRCRAFT
(5)
LOOK FOR ANOTHER TARGET
(5)
287


352
ADJUST EVENT TIMES
(6)
VIOLATE FUEL CONSTRAINT
(6)
YES
344
NO
374

which target region generates the target report and if the target is to be generated by region A then the particular friendly base of operations that will generate the target is determined, the type of target that has been encountered, the priority rating of the target, and the location of the target. One additional characteristic of the target that is provided by the subprogram is the time that the target will be reported to the DASC.

b. Generation of Aircraft

The number of aircraft that will be generated in the simulation is set by the input variable NAIRCF. Realizations of a random variable that is distributed U(0,1) are utilized to determine specific characteristics of a particular aircraft. Characteristics determined are aircraft interarrival times, the amount of time that an aircraft has to perform a mission (fuel restriction), and the particular aircraft-ordnance combination. For the simulation runs aircraft interarrival times were taken to be distributed U(1,9), and the amount of time that the aircraft had to perform its mission was taken to be distributed U(30,120). The particular aircraft-ordnance combination was determined by comparing the realization from the U(0,1) distribution to the values that the utilizer had inputed into the matrix ACTYP. By varying the values of the elements of the matrix ACTYP the user can specify the percentage of each aircraft-ordnance combination for the simulation.

c. Control Decision Point One

If all aircraft have been processed then there will be no more aircraft reporting in to the DASC and therefore the simulation should execute any missions that are still outstanding without checking for new aircraft arriving.

d. Control Decision Point Two

NAMISS is a control variable that denotes the number of missions that have been designated to attack targets but have not been executed yet. If there are no active missions in the mission queue then the program should proceed to the arriving aircraft queue to process the next aircraft. If there are active missions outstanding then the program must determine which event comes next in the simulation. Does an aircraft report in or is a mission to be executed?

e. Control Decision Point Three

Given that there are unexecuted missions in the mission queue then if the mission event time for the next mission (ITTDP) precedes the aircraft reports event time for the next aircraft (RTIME) the program goes to the bomb dropping portion of the simulation. If the reverse is true the program goes to the assignment section of the program.

f. Control Decision Point Four

Once it has been determined that the assignment portion of the program will be called, a check is made to see if any targets should be added to the Targets Reported

List before the next aircraft is assigned to a mission. If all targets have already been listed then the program goes directly to the assignment subprogram. If all targets have not been listed then the event time for the next aircraft arrival is compared to the event time for the next group of targets being listed. If the event time for the targets is the smaller of the two numbers then the appropriate targets are added to the Targets Reported List and then the program goes to the assignment routine. If the aircraft arrival time is the smaller of the two numbers the program goes directly to the assignment routine.

g. Updating of the Queues

Once a mission has been executed that mission is removed from the queue of the site that controlled the mission. The remaining missions in the site's queue are moved up one slot and the number of unexecuted missions (NAMISS) is decreased by one. The target is coded in the IATGT matrix as having been attacked. And the next mission in the MISSON queue is designated as the next mission to be executed.

h. Control Decision Point Five

Once it is determined that all aircraft have been assigned to missions the program proceeds to execute the missions that are remaining in the MISSON queue. After each mission is executed it is determined whether or not there are any active (not executed) missions remaining. If there are missions remaining they are executed one by one.

When it is determined that all missions have been executed the appropriate statistics and output are printed.

i. Repetition for Statistical Significance

The entire simulation is repeated "NOT" times so that enough data points will be available to provide some statistical significance to the results of the simulation. Once the simulation has been repeated "NOT" times the final statistics are calculated and printed out.

j. Computation of the CEP

Depending on which system is being utilized (TPQ-10 or TPQ-27) the program utilizes the appropriate formula to calculate the CEP for the mission. The CEP for the TPQ-10 is calculated utilizing data presented in Ref. 2. The CEP for the TPQ-27 is calculated from equations derived by linear regression on data presented in Ref. 3.

k. Dropping of Ordnance

Information on this portion of the program is included in Appendix A.

l. Assignment Portion

(1) Target Selection. The program first determines how many targets are presently on the Targets Reported List. A search is made of the Targets Reported List and the aircraft is assigned to the first available target of priority one. If there are no priority one targets available then priority two targets are considered next. If there are no priority two targets available priority three targets are considered then priority four then priority five. All

available targets of a higher priority will be assigned before any lower priority targets are assigned. Once an available target is located this target is then marked as being assigned to an aircraft and the target is then defined as unavailable to future aircraft.

(2) No Available Targets for an Aircraft. If after considering all of the targets that are presently on the Targets Reported List it is found that there are no targets available for assignment to the aircraft then the mission is considered as having been completed. The mission is placed at the end of the MISSON queue and the aircraft will not drop its ordnance.

(3) Selection of the Site for the Mission. After a target has been assigned to the aircraft the range from that target to all of the operating TPQ sites is computed. Any of the sites that cannot be utilized to attack the target due to the range restrictions of the system being used are disqualified. From the remaining sites the program chooses that site which gives the minimum target to site range; thereby minimizing the CEP for this particular mission. If none of the sites can be utilized against this target the target is marked as unavailable for the remainder of the simulation and another target is found for the aircraft.

(4) Computation of Event Times. Depending upon which TPQ system is being utilized different formulae are used to compute event times for the mission. Three different times are computed; 1) The time that the aircraft will first

come under precision control (ITTSR), 2) the time that the aircraft will drop its ordnance (ITTDP), and 3) the total time for the mission (the time it takes to fly from the origin (0,0) to the target, complete the mission, and return to the origin).

(5) Fuel Feasibility Check. A check is made to see if the total mission time exceeds the time that the aircraft has available on station. If the fuel constraint is violated then the target is marked as unavailable for this aircraft and another target is found for this mission.

(6) Site Queue. Next the position of the mission in the queue of the site handling the mission is ascertained. If the queue is presently empty the mission is assigned position number one in the queue. If the queue is not empty it must be determined where in the queue that the mission will be placed. The mission can be inserted in the queue in front of a mission that is already in the queue if the new mission is scheduled to be executed before one of the missions already in the queue.

There is a predetermined time during which the site's PTR will be occupied handling a mission. This is the time from when the PTR first acquires the aircraft, ITTSR, to the time the aircraft drops its ordnance, ITTDP. It was decided in the design of the simulation that the event times of a mission which was already in the queue of a particular site would not be altered. So if the time span during which the PTR is required for control of the new mission overlaps

the time span during which it is required for a mission already in the queue the mission times for the new mission will be adjusted.

The time span for precision control of the new mission is compared to the time span for precision control of the existing missions. If the new mission fits in front of existing missions without interfering with the scheduled execution of these missions then the new mission is inserted into the queue in front of those old missions. If the event times for the new mission are earlier than the event times of some of the previous missions but inserting the new mission in the queue would interfere with an old mission then the event times of the new mission will be adjusted. An increment of time is added to all of the event times of the new mission. The new mission is moved backwards in time until it no longer interferes with an existing mission. Then the new mission can be inserted into the interior of the queue or onto the end of the queue as appropriate. If it is necessary to alter the event times of a mission then another fuel feasibility check must be made. A fuel feasibility check is made as in (5) above.

(7) Mission Queue. The fully constituted mission which consists of an aircraft, a target, a controlling facility (site), and the event times ITTSR and ITTDP are inserted in the mission matrix MISSON. All missions are placed in the mission matrix. The location in the mission queue of a particular mission is determined by the value of

ITTDP. Missions are ordered in the queue by increasing values of ITTDP; the mission with the smallest value of ITTDP coming first.

3. Definitions

The following is a list of the variables used in the program and what they represent.

NSITES	The number of TPQ sites that will be utilized in the simulation
AA	The minimum range for a TPQ site
NMISS	The number of missions that have been constituted so far
NAIRCF	The number of aircraft which will be generated in the simulation
RTIME	The time that an aircraft reports in to the DASC
ITGTMC	A control variable
IMISS	The number of missions
NAMISS	The number of missions which have not yet been executed
MISSC	Controls which mission will be run next, i.e. it keeps track of the next mission's number
NCHECK	A control variable which indicates whether or not there are any unassigned aircraft left
NTGTGE	A control variable used in the target generation subprogram
ITNTGT	The number of targets that will be generated during the course of the simulation
MCOUNT	Control variable
NACTGT	The number of active targets
MTPQI	Maximum range of the TPQ
ITPTPQ	A control variable if its value is one then the TPQ-10 is in use if its value is 2 then the TPQ-27 is in use
TTA(4)	The percentage of each of the four possible target types that is located in target region A
TTB(4)	Same as above except target region B
TGTM(2)	First element gives the percentage of total targets that fall in regions A and D. The second element gives the percentage in target region A given that the targets are in target region A or D

ARAP(6)	For the six regions which make up target region A this matrix gives the percentage of the total A region targets that fall inside any particular A region
APRIOR(4)	The first element gives the percentage of A region targets that will be classified as priority one. The second element gives the percentage of A region targets that will be classified as priority one or priority two. The third and fourth elements perform the same function for target region D.
ITTA(4)	Gives the four different target types for target region A
ITTB(4)	Same as above but for target region B
AR(7,2)	Gives the X,Y co-ordinates for the location of the seven friendly bases of operations
ITGTIM(10,3)	First element gives the number of targets that will be added to the Targets Reported List. The second element gives the time at which these targets become available for addition to the Targets Reported List. The third element gives the total number of targets that will be on the list after these targets are added
IACTYP(10,3)	Provides for ten different aircraft type bomb load combinations. First element gives the aircraft type, second element the bomb weight, third element gives the number of bombs carried
XZ(3)	Gives the X co-ordinates of the ASRT sites
YZ(3)	Gives the Y co-ordinates of the ASRT sites
R(3)	Temporary storage for program-calculated target to site ranges
NTGS(3)	First element gives the number of missions presently assigned to ASRT site number one. Second element provides the same information for site number two. The third element provides the information for site number three
ITMISS(7)	Provides for temporary storage of information concerning a mission
ITEMTG(7)	Provides temporary storage of information concerning a target
ACTYP(10)	An input user filled matrix which contains what percentage of the total number of aircraft will be of any particular type

IATGT(50,7) Matrix that stores pertinent information on generated targets. First element is the target number, second element the time that the target is reported to the DASC, third element is the X co-ordinate, fourth element is the Y co-ordinate, fifth element is the target type, sixth element is the priority rating of the target, and the seventh element is the target status

IAIR(50,7) Matrix that stores information on aircraft that are generated. First element is the time that the aircraft reports in to the DASC, second element is the number of minutes that the aircraft will be available for, third element is the aircraft type, fourth element the type of bomb carried, fifth element is the number of bombs carried, sixth element is blank, and the seventh element is the aircraft's speed in knots.

MISSON(50,7) Matrix that stores information concerning the bombing missions. First element is the aircraft number, second element is the target number, third element is the number of the ASRT site that is controlling the mission, fourth element is the target type, fifth element is the range from the target to the site, and the sixth element is the time that the aircraft is scheduled to release its ordnance

IDSITE(3,50,3) Stores the mission information for a particular ASRT site

APPENDIX C

COMPUTER OUTPUT
HIT PROBABILITY TABLES

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP ***	RANGE R FROM TARGET *****	NUMBER OF BOMBS B *******	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT **********	95% CONFIDENCE LIMITS ON PROBABILITY LOWER *****	UPPER *****
30	10	1	0.24	0.156	0.324
		2	0.10	0.041	0.159
		3	0.03	0.0	0.063
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.57	0.473	0.667
		2	0.49	0.392	0.588
		3	0.31	0.219	0.401
		4	0.19	0.113	0.267
		5	0.07	0.020	0.120
		6	0.03	0.0	0.063
	30	1	0.85	0.780	0.920
		2	0.75	0.665	0.835
		3	0.58	0.483	0.677
		4	0.44	0.343	0.537
		5	0.25	0.165	0.335
		6	0.05	0.007	0.093
	40	1	0.86	0.792	0.928
		2	0.89	0.829	0.951
		3	0.73	0.643	0.817
		4	0.77	0.688	0.852
		5	0.59	0.494	0.686
		6	0.33	0.238	0.422
	50	1	0.98	0.953	1.000
		2	0.96	0.922	0.998
		3	0.96	0.922	0.998
		4	0.92	0.867	0.973
		5	0.82	0.745	0.895
		6	0.56	0.463	0.657

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP ***	RANGE R FROM TARGET ***	NUMBER OF BOMBS B *******	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT **********	95% CONFIDENCE LIMITS ON PROBABILITY LOWER *****	UPPER *****
30	60	1	0.99	0.970	1.000
		2	0.98	0.953	1.000
		3	1.00	1.000	1.000
		4	0.95	0.907	0.993
		5	0.88	0.816	0.944
		6	0.83	0.756	0.904
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.97	0.937	1.000
		4	0.98	0.953	1.000
		5	0.95	0.907	0.993
		6	0.95	0.907	0.993
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.99	0.970	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.12	0.056	0.184
		2	0.06	0.013	0.107
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.30	0.210	0.390
		2	0.26	0.174	0.346
		3	0.17	0.096	0.244
		4	0.09	0.034	0.146
		5	0.03	0.0	0.063
		6	0.02	0.0	0.047
	30	1	0.59	0.494	0.686
		2	0.47	0.372	0.568
		3	0.37	0.275	0.465
		4	0.24	0.156	0.324
		5	0.12	0.056	0.184
		6	0.04	0.002	0.078
	40	1	0.71	0.621	0.799
		2	0.66	0.567	0.753
		3	0.52	0.422	0.618
		4	0.50	0.402	0.598
		5	0.34	0.247	0.433
		6	0.20	0.122	0.278
	50	1	0.82	0.745	0.89[illegible]
		2	0.80	0.722	0.87
		3	0.73	0.643	0.81
		4	0.68	0.589	0.77
		5	0.63	0.535	0.72
		6	0.35	0.257	0.44

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	0.91	0.854	0.966
		2	0.87	0.804	0.936
		3	0.88	0.816	0.944
		4	0.77	0.688	0.852
		5	0.67	0.578	0.762
		6	0.57	0.473	0.667
	70	1	0.97	0.937	1.000
		2	0.95	0.907	0.993
		3	0.91	0.854	0.966
		4	0.87	0.804	0.936
		5	0.80	0.722	0.878
		6	0.71	0.621	0.799
	80	1	1.00	1.000	1.000
		2	0.98	0.953	1.000
		3	0.97	0.937	1.000
		4	0.94	0.893	0.987
		5	0.93	0.880	0.980
		6	0.85	0.780	0.920
	90	1	0.99	0.970	1.000
		2	0.99	0.970	1.000
		3	0.99	0.970	1.000
		4	0.97	0.937	1.000
		5	0.94	0.893	0.987
		6	0.94	0.893	0.987
	100	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	1.00	1.000	1.000
		4	0.99	0.970	1.000
		5	0.99	0.970	1.000
		6	0.97	0.937	1.000

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	10	1	0.10	0.041	0.159
		2	0.02	0.0	0.047
		3	0.03	0.0	0.063
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.26	0.174	0.346
		2	0.18	0.105	0.255
		3	0.14	0.072	0.208
		4	0.06	0.013	0.107
		5	0.02	0.0	0.047
		6	0.01	0.0	0.030
	30	1	0.48	0.382	0.578
		2	0.37	0.275	0.465
		3	0.23	0.148	0.312
		4	0.18	0.105	0.255
		5	0.18	0.105	0.255
		6	0.01	0.0	0.030
	40	1	0.58	0.483	0.677
		2	0.47	0.372	0.568
		3	0.40	0.304	0.496
		4	0.37	0.275	0.465
		5	0.23	0.148	0.312
		6	0.19	0.113	0.267
	50	1	0.77	0.688	0.852
		2	0.67	0.578	0.762
		3	0.53	0.432	0.628
		4	0.52	0.422	0.618
		5	0.37	0.275	0.465
		6	0.25	0.165	0.335

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	60	1	0.83	0.756	0.904
		2	0.74	0.654	0.826
		3	0.65	0.557	0.743
		4	0.72	0.632	0.808
		5	0.54	0.442	0.638
		6	0.39	0.294	0.486
	70	1	0.87	0.804	0.936
		2	0.81	0.733	0.887
		3	0.81	0.733	0.887
		4	0.80	0.722	0.878
		5	0.66	0.567	0.753
		6	0.52	0.422	0.618
	80	1	0.96	0.922	0.998
		2	0.87	0.804	0.936
		3	0.89	0.829	0.951
		4	0.78	0.699	0.861
		5	0.79	0.710	0.870
		6	0.66	0.567	0.753
	90	1	0.95	0.907	0.993
		2	0.96	0.922	0.998
		3	0.95	0.907	0.993
		4	0.85	0.780	0.920
		5	0.89	0.829	0.951
		6	0.82	0.745	0.895
	100	1	0.98	0.953	1.000
		2	0.97	0.937	1.00
		3	0.94	0.893	0.98
		4	0.95	0.907	0.99
		5	0.90	0.841	0.95
		6	0.83	0.756	0.90

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	10	1	0.07	0.020	0.120
		2	0.01	0.0	0.030
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.22	0.139	0.301
		2	0.06	0.013	0.107
		3	0.10	0.041	0.159
		4	0.03	0.0	0.063
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.32	0.229	0.411
		2	0.24	0.156	0.324
		3	0.22	0.139	0.301
		4	0.14	0.072	0.208
		5	0.09	0.034	0.146
		6	0.02	0.0	0.047
	40	1	0.41	0.314	0.506
		2	0.35	0.257	0.443
		3	0.25	0.165	0.335
		4	0.23	0.148	0.312
		5	0.13	0.064	0.196
		6	0.11	0.049	0.171
	50	1	0.53	0.432	0.628
		2	0.48	0.382	0.578
		3	0.47	0.372	0.568
		4	0.32	0.229	0.411
		5	0.23	0.148	0.312
		6	0.23	0.148	0.312

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	60	1	0.70	0.610	0.790
		2	0.62	0.525	0.715
		3	0.54	0.442	0.638
		4	0.49	0.392	0.588
		5	0.37	0.275	0.465
		6	0.32	0.229	0.411
	70	1	0.72	0.632	0.808
		2	0.68	0.589	0.771
		3	0.62	0.525	0.715
		4	0.54	0.442	0.638
		5	0.52	0.422	0.618
		6	0.51	0.412	0.608
	80	1	0.89	0.829	0.951
		2	0.74	0.654	0.826
		3	0.71	0.621	0.799
		4	0.71	0.621	0.799
		5	0.65	0.557	0.743
		6	0.49	0.392	0.588
	90	1	0.89	0.829	0.951
		2	0.84	0.768	0.912
		3	0.80	0.722	0.878
		4	0.75	0.665	0.835
		5	0.74	0.654	0.826
		6	0.54	0.442	0.638
	100	1	0.95	0.907	0.993
		2	0.86	0.792	0.928
		3	0.92	0.867	0.973
		4	0.84	0.768	0.912
		5	0.87	0.804	0.936
		6	0.74	0.654	0.826

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.06	0.013	0.107
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.14	0.072	0.208
		2	0.09	0.034	0.146
		3	0.08	0.027	0.133
		4	0.04	0.002	0.078
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.24	0.156	0.324
		2	0.17	0.096	0.244
		3	0.09	0.034	0.146
		4	0.05	0.007	0.093
		5	0.04	0.002	0.078
		6	0.02	0.0	0.047
	40	1	0.28	0.192	0.368
		2	0.22	0.139	0.301
		3	0.20	0.122	0.278
		4	0.12	0.056	0.184
		5	0.10	0.041	0.159
		6	0.07	0.020	0.120
	50	1	0.54	0.442	0.638
		2	0.48	0.382	0.5[illegible]3
		3	0.37	0.275	0.4[illegible]5
		4	0.30	0.210	0.3[illegible]0
		5	0.18	0.105	0.2[illegible]5
		6	0.04	0.002	0.0[illegible]3

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF 8 BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.55	0.452	0.648
		2	0.37	0.275	0.465
		3	0.40	0.304	0.496
		4	0.35	0.257	0.443
		5	0.28	0.192	0.368
		6	0.27	0.183	0.357
	70	1	0.59	0.494	0.686
		2	0.56	0.463	0.657
		3	0.58	0.483	0.677
		4	0.46	0.362	0.558
		5	0.36	0.266	0.454
		6	0.29	0.201	0.379
	80	1	0.72	0.632	0.808
		2	0.73	0.643	0.817
		3	0.69	0.599	0.781
		4	0.60	0.504	0.696
		5	0.48	0.382	0.578
		6	0.36	0.266	0.454
	90	1	0.80	0.722	0.878
		2	0.75	0.665	0.835
		3	0.70	0.610	0.790
		4	0.66	0.567	0.753
		5	0.56	0.463	0.657
		6	0.51	0.412	0.608
	100	1	0.87	0.804	0.936
		2	0.78	0.699	0.861
		3	0.79	0.710	0.870
		4	0.75	0.665	0.835
		5	0.71	0.621	0.799
		6	0.68	0.589	0.771

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	10	1	0.04	0.002	0.078
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.14	0.072	0.208
		2	0.04	0.002	0.078
		3	0.05	0.007	0.093
		4	0.03	0.0	0.063
		5	0.0	0.0	0.0
		6	0.01	0.0	0.030
	30	1	0.17	0.096	0.244
		2	0.11	0.049	0.171
		3	0.08	0.027	0.133
		4	0.09	0.034	0.146
		5	0.05	0.007	0.093
		6	0.01	0.0	0.030
	40	1	0.30	0.210	0.390
		2	0.24	0.156	0.324
		3	0.16	0.088	0.232
		4	0.15	0.080	0.220
		5	0.09	0.034	0.146
		6	0.09	0.034	0.146
	50	1	0.46	0.362	0.558
		2	0.35	0.257	0.443
		3	0.23	0.148	0.312
		4	0.22	0.139	0.301
		5	0.11	0.049	0.171
		6	0.12	0.056	0.184

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	60	1	0.48	0.382	0.578
		2	0.41	0.314	0.506
		3	0.32	0.229	0.411
		4	0.31	0.219	0.401
		5	0.30	0.210	0.390
		6	0.14	0.072	0.208
	70	1	0.61	0.514	0.706
		2	0.45	0.352	0.548
		3	0.46	0.362	0.558
		4	0.40	0.304	0.496
		5	0.33	0.238	0.422
		6	0.28	0.192	0.368
	80	1	0.65	0.557	0.743
		2	0.50	0.402	0.598
		3	0.58	0.483	0.677
		4	0.40	0.304	0.496
		5	0.45	0.352	0.548
		6	0.35	0.257	0.443
	90	1	0.70	0.610	0.790
		2	0.68	0.589	0.771
		3	0.60	0.504	0.696
		4	0.51	0.412	0.608
		5	0.54	0.442	0.638
		6	0.45	0.352	0.548
	100	1	0.78	0.699	0.861
		2	0.74	0.654	0.826
		3	0.70	0.610	0.790
		4	0.60	0.504	0.696
		5	0.65	0.557	0.743
		6	0.51	0.412	0.608

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	10	1	0.03	0.0	0.063
		2	0.01	0.0	0.030
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.10	0.041	0.159
		2	0.03	0.0	0.063
		3	0.04	0.002	0.078
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.13	0.064	0.196
		2	0.15	0.080	0.220
		3	0.11	0.049	0.171
		4	0.08	0.027	0.133
		5	0.04	0.002	0.078
		6	0.02	0.0	0.047
	40	1	0.24	0.156	0.324
		2	0.16	0.088	0.232
		3	0.11	0.049	0.171
		4	0.12	0.056	0.184
		5	0.05	0.007	0.093
		6	0.05	0.007	0.093
	50	1	0.36	0.266	0.454
		2	0.24	0.156	0.324
		3	0.19	0.113	0.267
		4	0.20	0.122	0.278
		5	0.11	0.049	0.171
		6	0.05	0.007	0.093

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	60	1	0.42	0.323	0.517
		2	0.32	0.229	0.411
		3	0.34	0.247	0.433
		4	0.24	0.156	0.324
		5	0.23	0.148	0.312
		6	0.20	0.122	0.278
	70	1	0.47	0.372	0.568
		2	0.44	0.343	0.537
		3	0.31	0.219	0.401
		4	0.32	0.229	0.411
		5	0.27	0.183	0.357
		6	0.29	0.201	0.379
	80	1	0.60	0.504	0.696
		2	0.53	0.432	0.628
		3	0.40	0.304	0.496
		4	0.41	0.314	0.506
		5	0.30	0.210	0.390
		6	0.25	0.165	0.335
	90	1	0.63	0.535	0.725
		2	0.59	0.494	0.686
		3	0.49	0.392	0.588
		4	0.47	0.372	0.568
		5	0.44	0.343	0.537
		6	0.28	0.192	0.368
	100	1	0.68	0.589	0.771
		2	0.61	0.514	0.706
		3	0.66	0.567	0.753
		4	0.62	0.525	0.715
		5	0.63	0.535	0.725
		6	0.45	0.352	0.548

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.03	0.0	0.063
		2	0.02	0.0	0.047
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.10	0.041	0.159
		2	0.07	0.020	0.120
		3	0.03	0.0	0.063
		4	0.03	0.0	0.063
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.08	0.027	0.133
		2	0.07	0.020	0.120
		3	0.04	0.002	0.078
		4	0.02	0.0	0.047
		5	0.03	0.0	0.063
		6	0.0	0.0	0.0
	40	1	0.14	0.072	0.208
		2	0.10	0.041	0.159
		3	0.15	0.080	0.220
		4	0.05	0.007	0.093
		5	0.04	0.002	0.078
		6	0.04	0.002	0.078
	50	1	0.36	0.266	0.454
		2	0.27	0.183	0.357
		3	0.14	0.072	0.208
		4	0.16	0.088	0.232
		5	0.11	0.049	0.171
		6	0.04	0.002	0.078

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.29	0.201	0.379
		2	0.20	0.122	0.278
		3	0.23	0.148	0.312
		4	0.17	0.096	0.244
		5	0.20	0.122	0.278
		6	0.14	0.072	0.208
	70	1	0.38	0.285	0.475
		2	0.37	0.275	0.465
		3	0.36	0.266	0.454
		4	0.26	0.174	0.346
		5	0.24	0.156	0.324
		6	0.14	0.072	0.208
	80	1	0.42	0.323	0.517
		2	0.54	0.442	0.638
		3	0.50	0.402	0.598
		4	0.36	0.266	0.454
		5	0.31	0.219	0.401
		6	0.19	0.113	0.267
	90	1	0.56	0.463	0.657
		2	0.51	0.412	0.608
		3	0.45	0.352	0.548
		4	0.44	0.343	0.537
		5	0.31	0.219	0.401
		6	0.34	0.247	0.433
	100	1	0.62	0.525	0.715
		2	0.58	0.483	0.67[illegible]
		3	0.54	0.442	0.63[illegible]
		4	0.48	0.382	0.57[illegible]
		5	0.41	0.314	0.50[illegible]
		6	0.32	0.229	0.41[illegible]

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	10	1	0.03	0.0	0.063
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.09	0.034	0.146
		2	0.02	0.0	0.047
		3	0.0	0.0	0.0
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.01	0.0	0.030
	30	1	0.07	0.020	0.120
		2	0.05	0.007	0.093
		3	0.04	0.002	0.078
		4	0.05	0.007	0.093
		5	0.02	0.0	0.047
		6	0.01	0.0	0.030
	40	1	0.22	0.139	0.301
		2	0.15	0.080	0.220
		3	0.06	0.013	0.107
		4	0.09	0.034	0.146
		5	0.06	0.013	0.107
		6	0.0	0.0	0.0
	50	1	0.31	0.219	0.401
		2	0.21	0.130	0.290
		3	0.14	0.072	0.208
		4	0.15	0.080	0.220
		5	0.04	0.002	0.078
		6	0.06	0.013	0.107

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	60	1	0.26	0.174	0.346
		2	0.24	0.156	0.324
		3	0.16	0.088	0.232
		4	0.22	0.139	0.301
		5	0.16	0.088	0.232
		6	0.06	0.013	0.107
	70	1	0.34	0.247	0.433
		2	0.23	0.148	0.312
		3	0.32	0.229	0.411
		4	0.25	0.165	0.335
		5	0.13	0.064	0.196
		6	0.12	0.056	0.184
	80	1	0.38	0.285	0.475
		2	0.29	0.201	0.379
		3	0.42	0.323	0.517
		4	0.25	0.165	0.335
		5	0.30	0.210	0.390
		6	0.20	0.122	0.278
	90	1	0.41	0.314	0.506
		2	0.47	0.372	0.568
		3	0.32	0.229	0.411
		4	0.33	0.238	0.422
		5	0.37	0.275	0.465
		6	0.28	0.192	0.368
	100	1	0.54	0.442	0.638
		2	0.50	0.402	0.598
		3	0.51	0.412	0.608
		4	0.41	0.314	0.506
		5	0.44	0.343	0.537
		6	0.31	0.219	0.401

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
120	10	1	0.01	0.0	0.030
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.07	0.020	0.120
		2	0.0	0.0	0.0
		3	0.03	0.0	0.063
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.10	0.041	0.159
		2	0.08	0.027	0.133
		3	0.06	0.013	0.107
		4	0.04	0.002	0.078
		5	0.04	0.002	0.078
		6	0.01	0.0	0.030
	40	1	0.14	0.072	0.208
		2	0.10	0.041	0.159
		3	0.08	0.027	0.133
		4	0.06	0.013	0.107
		5	0.04	0.002	0.078
		6	0.01	0.0	0.030
	50	1	0.18	0.105	0.255
		2	0.12	0.056	0.184
		3	0.12	0.056	0.184
		4	0.10	0.041	0.159
		5	0.05	0.007	0.093
		6	0.03	0.0	0.063

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
120	60	1	0.26	0.174	0.346
		2	0.23	0.148	0.312
		3	0.15	0.080	0.220
		4	0.17	0.096	0.244
		5	0.13	0.064	0.196
		6	0.15	0.080	0.220
	70	1	0.32	0.229	0.411
		2	0.27	0.183	0.357
		3	0.21	0.130	0.290
		4	0.22	0.139	0.301
		5	0.19	0.113	0.267
		6	0.19	0.113	0.267
	80	1	0.43	0.333	0.527
		2	0.39	0.294	0.486
		3	0.28	0.192	0.368
		4	0.30	0.210	0.390
		5	0.18	0.105	0.255
		6	0.17	0.096	0.244
	90	1	0.37	0.275	0.465
		2	0.39	0.294	0.486
		3	0.33	0.238	0.422
		4	0.30	0.210	0.390
		5	0.29	0.201	0.379
		6	0.19	0.113	0.267
	100	1	0.43	0.333	0.527
		2	0.43	0.333	0.527
		3	0.43	0.333	0.527
		4	0.43	0.333	0.527
		5	0.38	0.285	0.475
		6	0.30	0.210	0.390

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.19	0.113	0.267
		2	0.03	0.0	0.063
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.61	0.514	0.706
		2	0.25	0.174	0.346
		3	0.03	0.0	0.063
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.87	0.804	0.936
		2	0.59	0.494	0.686
		3	0.33	0.238	0.422
		4	0.07	0.020	0.120
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
	40	1	0.94	0.893	0.987
		2	0.86	0.792	0.928
		3	0.59	0.494	0.686
		4	0.37	0.275	0.465
		5	0.13	0.064	0.196
		6	0.02	0.0	0.047
	50	1	1.00	1.000	1.000
		2	0.95	0.907	0.993
		3	0.85	0.780	0.920
		4	0.65	0.557	0.743
		5	0.36	0.266	0.454
		6	0.15	0.080	0.220

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.97	0.937	1.000
		4	0.88	0.816	0.944
		5	0.51	0.412	0.608
		6	0.30	0.210	0.390
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.99	0.970	1.000
		4	0.92	0.867	0.973
		5	0.81	0.733	0.887
		6	0.49	0.392	0.588
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.99	0.970	1.000
		5	0.94	0.893	0.987
		6	0.66	0.567	0.753
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.88	0.816	0.944
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.90	0.841	0.959

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.09	0.034	0.146
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.21	0.130	0.290
		2	0.04	0.002	0.078
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.38	0.285	0.475
		2	0.17	0.096	0.244
		3	0.07	0.020	0.120
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	40	1	0.46	0.362	0.558
		2	0.28	0.192	0.368
		3	0.15	0.080	0.220
		4	0.07	0.020	0.120
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
	50	1	0.67	0.578	0.762
		2	0.53	0.432	0.628
		3	0.38	0.285	0.475
		4	0.21	0.130	0.290
		5	0.05	0.007	0.093
		6	0.02	0.0	0.047

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.76	0.676	0.844
		2	0.51	0.412	0.608
		3	0.51	0.412	0.608
		4	0.33	0.238	0.422
		5	0.17	0.096	0.244
		6	0.11	0.049	0.171
	70	1	0.82	0.745	0.895
		2	0.78	0.699	0.861
		3	0.64	0.546	0.734
		4	0.40	0.304	0.496
		5	0.28	0.192	0.368
		6	0.11	0.049	0.171
	80	1	0.90	0.841	0.959
		2	0.83	0.756	0.904
		3	0.76	0.676	0.844
		4	0.58	0.483	0.677
		5	0.43	0.333	0.527
		6	0.18	0.105	0.255
	90	1	0.94	0.893	0.987
		2	0.84	0.768	0.912
		3	0.79	0.710	0.870
		4	0.63	0.535	0.725
		5	0.50	0.402	0.598
		6	0.35	0.257	0.443
	100	1	0.96	0.922	0.998
		2	0.90	0.841	0.959
		3	0.85	0.780	0.920
		4	0.74	0.654	0.826
		5	0.65	0.557	0.743
		6	0.42	0.323	0.517

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN P METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.02	0.0	0.047
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	20	1	0.11	0.049	0.171
		2	0.02	0.0	0.047
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
	30	1	0.20	0.122	0.278
		2	0.08	0.027	0.133
		3	0.01	0.0	0.030
		4	0.01	0.0	0.030
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
	40	1	0.20	0.122	0.278
		2	0.11	0.049	0.171
		3	0.12	0.056	0.184
		4	0.01	0.0	0.030
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
	50	1	0.49	0.392	0.588
		2	0.35	0.257	0.443
		3	0.17	0.096	0.244
		4	0.09	0.034	0.146
		5	0.03	0.0	0.063
		6	0.02	0.0	0.047

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.44	0.343	0.537
		2	0.24	0.156	0.324
		3	0.24	0.156	0.324
		4	0.15	0.080	0.220
		5	0.10	0.041	0.159
		6	0.07	0.020	0.120
	70	1	0.45	0.362	0.558
		2	0.43	0.333	0.527
		3	0.39	0.294	0.486
		4	0.21	0.130	0.290
		5	0.14	0.072	0.208
		6	0.08	0.027	0.133
	80	1	0.61	0.514	0.706
		2	0.60	0.504	0.696
		3	0.49	0.392	0.588
		4	0.35	0.257	0.443
		5	0.19	0.113	0.267
		6	0.06	0.013	0.107
	90	1	0.65	0.557	0.743
		2	0.54	0.442	0.638
		3	0.48	0.382	0.578
		4	0.41	0.314	0.506
		5	0.24	0.156	0.324
		6	0.15	0.080	0.220
	100	1	0.73	0.643	0.817
		2	0.61	0.514	0.706
		3	0.51	0.412	0.608
		4	0.42	0.323	0.517
		5	0.35	0.266	0.454
		6	0.17	0.096	0.244

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	10	1	0.35	0.257	0.443
		2	0.20	0.122	0.278
		3	0.09	0.034	0.146
		4	0.03	0.0	0.063
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.69	0.599	0.781
		2	0.57	0.473	0.667
		3	0.47	0.372	0.568
		4	0.34	0.247	0.433
		5	0.24	0.156	0.324
		6	0.11	0.049	0.171
		7	0.09	0.034	0.146
		8	0.03	0.0	0.063
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.86	0.792	0.928
		2	0.90	0.841	0.959
		3	0.74	0.654	0.826
		4	0.71	0.621	0.799
		5	0.56	0.463	0.657
		6	0.56	0.463	0.657
		7	0.42	0.323	0.517
		8	0.26	0.174	0.346
		9	0.16	0.088	0.232
		10	0.03	0.0	0.063
	40	1	0.95	0.907	0.993
		2	0.95	0.907	0.993
		3	0.90	0.841	0.959
		4	0.83	0.756	0.904
		5	0.73	0.643	0.817
		6	0.72	0.632	0.808
		7	0.62	0.525	0.715
		8	0.58	0.483	0.677
		9	0.46	0.362	0.558
		10	0.26	0.174	0.346
	50	1	0.99	0.970	1.000
		2	0.99	0.970	1.000
		3	0.99	0.970	1.000
		4	0.95	0.907	0.993
		5	0.91	0.854	0.966
		6	0.90	0.841	0.959
		7	0.87	0.804	0.936
		8	0.78	0.699	0.861
		9	0.68	0.589	0.771
		10	0.51	0.412	0.608

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.98	0.953	1.000
		5	0.97	0.937	1.000
		6	0.93	0.880	0.980
		7	0.94	0.893	0.987
		8	0.87	0.804	0.936
		9	0.84	0.768	0.912
		10	0.76	0.676	0.844
	70	1	0.99	0.970	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	0.98	0.953	1.000
		8	0.97	0.937	1.000
		9	0.96	0.922	0.998
		10	0.91	0.854	0.966
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	0.99	0.970	1.000
		8	0.96	0.922	0.998
		9	0.99	0.970	1.000
		10	0.96	0.922	0.998
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	1.00	1.000	1.000
		10	0.99	0.970	1.000
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	1.00	1.000	1.000
		10	1.00	1.000	1.000

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.21	0.130	0.290
		2	0.10	0.041	0.159
		3	0.04	0.002	0.078
		4	0.02	0.0	0.047
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.52	0.422	0.618
		2	0.39	0.294	0.486
		3	0.26	0.174	0.346
		4	0.20	0.122	0.278
		5	0.10	0.041	0.159
		6	0.06	0.013	0.107
		7	0.02	0.0	0.047
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.63	0.535	0.725
		2	0.67	0.578	0.762
		3	0.50	0.402	0.598
		4	0.44	0.343	0.537
		5	0.39	0.294	0.486
		6	0.37	0.275	0.465
		7	0.24	0.156	0.324
		8	0.14	0.072	0.208
		9	0.07	0.020	0.120
		10	0.01	0.0	0.030
	40	1	0.80	0.722	0.878
		2	0.73	0.643	0.817
		3	0.71	0.621	0.799
		4	0.58	0.483	0.677
		5	0.44	0.343	0.537
		6	0.54	0.442	0.638
		7	0.38	0.285	0.475
		8	0.35	0.257	0.443
		9	0.27	0.183	0.357
		10	0.17	0.096	0.244
	50	1	0.88	0.816	0.944
		2	0.86	0.792	0.928
		3	0.81	0.733	0.887
		4	0.81	0.733	0.887
		5	0.78	0.699	0.861
		6	0.70	0.610	0.790
		7	0.58	0.483	0.677
		8	0.50	0.402	0.598
		9	0.50	0.402	0.598
		10	0.29	0.201	0.379

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	0.92	0.867	0.973
		2	0.89	0.829	0.951
		3	0.85	0.780	0.920
		4	0.85	0.780	0.920
		5	0.87	0.804	0.936
		6	0.77	0.688	0.852
		7	0.77	0.688	0.852
		8	0.69	0.599	0.781
		9	0.69	0.599	0.781
		10	0.50	0.402	0.598
	70	1	0.98	0.953	1.000
		2	0.97	0.937	1.000
		3	0.97	0.937	1.000
		4	0.95	0.907	0.993
		5	0.87	0.804	0.936
		6	0.95	0.907	0.993
		7	0.82	0.745	0.895
		8	0.83	0.756	0.904
		9	0.82	0.745	0.895
		10	0.64	0.546	0.734
	80	1	0.99	0.970	1.000
		2	0.99	0.970	1.000
		3	1.00	1.000	1.000
		4	0.96	0.922	0.998
		5	0.98	0.953	1.000
		6	0.94	0.893	0.987
		7	0.93	0.880	0.980
		8	0.90	0.841	0.959
		9	0.85	0.780	0.920
		10	0.85	0.780	0.920
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.97	0.937	1.000
		5	0.98	0.953	1.000
		6	0.99	0.970	1.000
		7	0.93	0.880	0.980
		8	0.98	0.953	1.000
		9	0.94	0.893	0.987
		10	0.89	0.829	0.951
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.99	0.970	1.000
		6	1.00	1.000	1.000
		7	0.99	0.970	1.000
		8	0.98	0.953	1.000
		9	0.95	0.907	0.993
		10	0.94	0.893	0.987

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	10	1	0.15	0.080	0.220
		2	0.11	0.049	0.171
		3	0.03	0.0	0.063
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.31	0.219	0.401
		2	0.22	0.139	0.301
		3	0.19	0.113	0.267
		4	0.10	0.041	0.159
		5	0.06	0.013	0.107
		6	0.03	0.0	0.063
		7	0.03	0.0	0.063
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.48	0.382	0.578
		2	0.38	0.285	0.475
		3	0.37	0.275	0.465
		4	0.22	0.139	0.301
		5	0.25	0.165	0.335
		6	0.14	0.072	0.208
		7	0.14	0.072	0.208
		8	0.10	0.041	0.159
		9	0.04	0.002	0.078
		10	0.05	0.007	0.093
	40	1	0.70	0.610	0.790
		2	0.57	0.473	0.667
		3	0.45	0.352	0.548
		4	0.48	0.382	0.578
		5	0.38	0.285	0.475
		6	0.34	0.247	0.433
		7	0.27	0.183	0.357
		8	0.25	0.165	0.335
		9	0.15	0.080	0.220
		10	0.10	0.041	0.159
	50	1	0.73	0.643	0.817
		2	0.67	0.578	0.762
		3	0.54	0.442	0.638
		4	0.64	0.546	0.734
		5	0.51	0.412	0.608
		6	0.47	0.372	0.568
		7	0.50	0.402	0.598
		8	0.34	0.247	0.433
		9	0.30	0.210	0.390
		10	0.24	0.156	0.324

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	60	1	0.81	0.733	0.887
		2	0.75	0.665	0.835
		3	0.76	0.676	0.844
		4	0.71	0.621	0.799
		5	0.65	0.557	0.743
		6	0.70	0.610	0.790
		7	0.53	0.432	0.628
		8	0.56	0.463	0.657
		9	0.45	0.352	0.548
		10	0.34	0.247	0.433
	70	1	0.89	0.829	0.951
		2	0.88	0.816	0.944
		3	0.90	0.841	0.959
		4	0.76	0.676	0.844
		5	0.78	0.699	0.861
		6	0.79	0.710	0.870
		7	0.73	0.643	0.817
		8	0.68	0.589	0.771
		9	0.60	0.504	0.696
		10	0.51	0.412	0.608
	80	1	0.92	0.867	0.973
		2	0.92	0.867	0.973
		3	0.91	0.854	0.966
		4	0.85	0.780	0.920
		5	0.87	0.804	0.936
		6	0.81	0.733	0.887
		7	0.84	0.768	0.912
		8	0.80	0.722	0.878
		9	0.79	0.710	0.870
		10	0.60	0.504	0.696
	90	1	0.98	0.953	1.000
		2	0.92	0.867	0.973
		3	0.99	0.970	1.000
		4	0.92	0.867	0.973
		5	0.89	0.829	0.951
		6	0.94	0.893	0.987
		7	0.89	0.829	0.951
		8	0.86	0.792	0.928
		9	0.76	0.676	0.844
		10	0.77	0.688	0.852
	100	1	0.99	0.970	1.000
		2	0.96	0.922	0.998
		3	0.99	0.970	1.000
		4	0.91	0.854	0.966
		5	0.96	0.922	0.998
		6	0.97	0.937	1.000
		7	0.91	0.854	0.966
		8	0.91	0.854	0.966
		9	0.88	0.816	0.944
		10	0.86	0.792	0.928

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	10	1	0.07	0.020	0.120
		2	0.05	0.007	0.093
		3	0.03	0.0	0.063
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.25	0.165	0.335
		2	0.14	0.072	0.208
		3	0.07	0.020	0.120
		4	0.15	0.080	0.220
		5	0.06	0.013	0.107
		6	0.01	0.0	0.030
		7	0.01	0.0	0.030
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.38	0.285	0.475
		2	0.26	0.174	0.346
		3	0.20	0.122	0.278
		4	0.14	0.072	0.208
		5	0.11	0.049	0.171
		6	0.13	0.064	0.196
		7	0.11	0.049	0.171
		8	0.03	0.0	0.063
		9	0.04	0.002	0.078
		10	0.0	0.0	0.0
	40	1	0.52	0.422	0.618
		2	0.38	0.285	0.475
		3	0.44	0.343	0.537
		4	0.35	0.257	0.443
		5	0.26	0.174	0.346
		6	0.29	0.201	0.379
		7	0.17	0.096	0.244
		8	0.20	0.122	0.278
		9	0.09	0.034	0.146
		10	0.08	0.027	0.133
	50	1	0.57	0.473	0.667
		2	0.59	0.494	0.686
		3	0.51	0.412	0.608
		4	0.38	0.285	0.475
		5	0.49	0.392	0.588
		6	0.42	0.323	0.517
		7	0.38	0.285	0.475
		8	0.31	0.219	0.401
		9	0.28	0.192	0.368
		10	0.16	0.088	0.232

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	60	1	0.73	0.643	0.817
		2	0.66	0.567	0.753
		3	0.58	0.483	0.677
		4	0.48	0.382	0.578
		5	0.54	0.442	0.638
		6	0.52	0.422	0.618
		7	0.44	0.343	0.537
		8	0.37	0.275	0.465
		9	0.37	0.275	0.465
		10	0.23	0.148	0.312
	70	1	0.78	0.699	0.861
		2	0.64	0.546	0.734
		3	0.75	0.665	0.835
		4	0.64	0.546	0.734
		5	0.67	0.578	0.762
		6	0.58	0.483	0.677
		7	0.55	0.452	0.648
		8	0.50	0.402	0.598
		9	0.51	0.412	0.608
		10	0.37	0.275	0.465
	80	1	0.84	0.768	0.912
		2	0.79	0.710	0.870
		3	0.76	0.676	0.844
		4	0.78	0.699	0.861
		5	0.73	0.643	0.817
		6	0.71	0.621	0.799
		7	0.64	0.546	0.734
		8	0.67	0.578	0.762
		9	0.57	0.473	0.667
		10	0.50	0.402	0.598
	90	1	0.94	0.893	0.987
		2	0.88	0.816	0.944
		3	0.87	0.804	0.936
		4	0.82	0.745	0.895
		5	0.82	0.745	0.895
		6	0.78	0.699	0.861
		7	0.69	0.599	0.781
		8	0.76	0.676	0.844
		9	0.69	0.599	0.781
		10	0.62	0.525	0.715
	100	1	0.98	0.953	1.000
		2	0.93	0.880	0.980
		3	0.91	0.854	0.966
		4	0.87	0.804	0.936
		5	0.91	0.854	0.966
		6	0.83	0.756	0.904
		7	0.85	0.780	0.920
		8	0.74	0.654	0.826
		9	0.70	0.610	0.790
		10	0.69	0.599	0.781

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.06	0.013	0.107
		2	0.02	0.0	0.047
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.19	0.113	0.267
		2	0.11	0.049	0.171
		3	0.05	0.007	0.093
		4	0.04	0.002	0.078
		5	0.02	0.0	0.047
		6	0.01	0.0	0.030
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.32	0.229	0.411
		2	0.23	0.148	0.312
		3	0.18	0.105	0.255
		4	0.15	0.080	0.220
		5	0.15	0.080	0.220
		6	0.18	0.105	0.255
		7	0.08	0.027	0.133
		8	0.05	0.007	0.093
		9	0.04	0.002	0.078
		10	0.0	0.0	0.0
	40	1	0.40	0.304	0.496
		2	0.22	0.139	0.301
		3	0.27	0.183	0.357
		4	0.19	0.113	0.267
		5	0.24	0.156	0.324
		6	0.25	0.165	0.335
		7	0.13	0.064	0.196
		8	0.10	0.041	0.159
		9	0.06	0.013	0.107
		10	0.06	0.013	0.107
	50	1	0.41	0.314	0.506
		2	0.42	0.323	0.517
		3	0.36	0.266	0.454
		4	0.45	0.352	0.548
		5	0.42	0.323	0.517
		6	0.29	0.201	0.379
		7	0.22	0.139	0.301
		8	0.18	0.105	0.255
		9	0.17	0.096	0.244
		10	0.09	0.034	0.146

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.61	0.514	0.706
		2	0.57	0.473	0.667
		3	0.44	0.343	0.537
		4	0.42	0.323	0.517
		5	0.43	0.333	0.527
		6	0.40	0.304	0.496
		7	0.28	0.192	0.368
		8	0.27	0.183	0.357
		9	0.26	0.174	0.346
		10	0.16	0.088	0.232
	70	1	0.65	0.557	0.743
		2	0.54	0.442	0.638
		3	0.65	0.557	0.743
		4	0.54	0.442	0.638
		5	0.41	0.314	0.506
		6	0.52	0.422	0.618
		7	0.37	0.275	0.465
		8	0.50	0.402	0.598
		9	0.34	0.247	0.433
		10	0.25	0.165	0.335
	80	1	0.84	0.768	0.912
		2	0.73	0.643	0.817
		3	0.71	0.621	0.799
		4	0.72	0.632	0.808
		5	0.54	0.442	0.638
		6	0.59	0.494	0.686
		7	0.60	0.504	0.696
		8	0.51	0.412	0.6 3
		9	0.51	0.412	0.6 3
		10	0.40	0.304	0.4
	90	1	0.85	0.780	0.9 0
		2	0.76	0.676	0.8 4
		3	0.71	0.621	0.7 9
		4	0.71	0.621	0.7 9
		5	0.79	0.710	0.870
		6	0.70	0.610	0.790
		7	0.61	0.514	0.706
		8	0.66	0.567	0.753
		9	0.52	0.422	0.618
		10	0.48	0.382	0.578
	100	1	0.88	0.816	0.944
		2	0.81	0.733	0.887
		3	0.81	0.733	0.887
		4	0.86	0.792	0.928
		5	0.82	0.745	0.895
		6	0.82	0.745	0.895
		7	0.73	0.643	0.817
		8	0.68	0.589	0.771
		9	0.71	0.621	0.799
		10	0.61	0.514	0.706

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	10	1	0.06	0.013	0.107
		2	0.04	0.002	0.078
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.11	0.049	0.171
		2	0.15	0.080	0.220
		3	0.09	0.034	0.146
		4	0.06	0.013	0.107
		5	0.02	0.0	0.047
		6	0.03	0.0	0.063
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.20	0.122	0.278
		2	0.17	0.096	0.244
		3	0.17	0.096	0.244
		4	0.10	0.041	0.159
		5	0.10	0.041	0.159
		6	0.09	0.034	0.146
		7	0.07	0.020	0.120
		8	0.0	0.0	0.0
		9	0.01	0.0	0.030
		10	0.02	0.0	0.047
	40	1	0.33	0.238	0.422
		2	0.25	0.165	0.335
		3	0.21	0.130	0.290
		4	0.22	0.139	0.301
		5	0.19	0.113	0.267
		6	0.16	0.088	0.232
		7	0.10	0.041	0.159
		8	0.10	0.041	0.159
		9	0.07	0.020	0.120
		10	0.04	0.002	0.078
	50	1	0.36	0.266	0.454
		2	0.32	0.229	0.411
		3	0.22	0.139	0.301
		4	0.24	0.156	0.324
		5	0.22	0.139	0.301
		6	0.20	0.122	0.278
		7	0.16	0.088	0.232
		8	0.18	0.105	0.255
		9	0.09	0.034	0.146
		10	0.05	0.007	0.093

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	60	1	0.54	0.442	0.638
		2	0.45	0.352	0.548
		3	0.40	0.304	0.496
		4	0.38	0.285	0.475
		5	0.36	0.266	0.454
		6	0.33	0.238	0.422
		7	0.31	0.219	0.401
		8	0.25	0.165	0.335
		9	0.19	0.113	0.267
		10	0.19	0.113	0.267
	70	1	0.58	0.483	0.677
		2	0.59	0.494	0.686
		3	0.55	0.452	0.648
		4	0.52	0.422	0.618
		5	0.39	0.294	0.486
		6	0.41	0.314	0.506
		7	0.30	0.210	0.390
		8	0.29	0.201	0.379
		9	0.27	0.183	0.357
		10	0.27	0.183	0.357
	80	1	0.64	0.546	0.734
		2	0.63	0.535	0.725
		3	0.59	0.494	0.686
		4	0.47	0.372	0.568
		5	0.50	0.402	0.598
		6	0.46	0.362	0.558
		7	0.49	0.392	0.588
		8	0.48	0.382	0.578
		9	0.46	0.362	0.558
		10	0.32	0.229	0.411
	90	1	0.72	0.632	0.808
		2	0.69	0.599	0.781
		3	0.64	0.546	0.734
		4	0.67	0.578	0.762
		5	0.54	0.442	0.638
		6	0.63	0.535	0.725
		7	0.55	0.452	0.648
		8	0.56	0.463	0.657
		9	0.49	0.392	0.588
		10	0.47	0.372	0.568
	100	1	0.81	0.733	0.887
		2	0.79	0.710	0.870
		3	0.70	0.610	0.790
		4	0.64	0.546	0.734
		5	0.70	0.610	0.790
		6	0.68	0.589	0.771
		7	0.60	0.504	0.696
		8	0.61	0.514	0.706
		9	0.48	0.382	0.578
		10	0.52	0.422	0.618

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP ***	RANGE R FROM TARGET *****	NUMBER OF BOMBS B *******	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT **********	95% CONFIDENCE LIMITS ON PROBABILITY LOWER *****	UPPER *****
90	10	1	0.03	0.0	0.063
		2	0.01	0.0	0.030
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.15	0.080	0.220
		2	0.08	0.027	0.133
		3	0.05	0.007	0.093
		4	0.08	0.027	0.133
		5	0.03	0.0	0.063
		6	0.01	0.0	0.030
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.15	0.080	0.220
		2	0.10	0.041	0.159
		3	0.08	0.027	0.133
		4	0.09	0.034	0.146
		5	0.08	0.027	0.133
		6	0.08	0.027	0.133
		7	0.02	0.0	0.047
		8	0.01	0.0	0.030
		9	0.04	0.002	0.078
		10	0.0	0.0	0.0
	40	1	0.27	0.183	0.357
		2	0.14	0.072	0.208
		3	0.23	0.148	0.312
		4	0.17	0.096	0.244
		5	0.14	0.072	0.208
		6	0.10	0.041	0.159
		7	0.03	0.0	0.063
		8	0.12	0.056	0.184
		9	0.04	0.002	0.078
		10	0.05	0.007	0.093
	50	1	0.33	0.238	0.422
		2	0.33	0.238	0.422
		3	0.26	0.174	0.346
		4	0.18	0.105	0.255
		5	0.31	0.219	0.401
		6	0.23	0.148	0.312
		7	0.23	0.148	0.312
		8	0.13	0.064	0.196
		9	0.12	0.056	0.184
		10	0.06	0.013	0.107

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	60	1	0.47	0.372	0.568
		2	0.34	0.247	0.433
		3	0.23	0.148	0.312
		4	0.32	0.229	0.411
		5	0.24	0.156	0.324
		6	0.31	0.219	0.401
		7	0.21	0.130	0.290
		8	0.21	0.130	0.290
		9	0.17	0.096	0.244
		10	0.09	0.034	0.146
	70	1	0.52	0.422	0.618
		2	0.36	0.266	0.454
		3	0.50	0.402	0.598
		4	0.33	0.238	0.422
		5	0.33	0.238	0.422
		6	0.31	0.219	0.401
		7	0.26	0.174	0.346
		8	0.31	0.219	0.401
		9	0.28	0.192	0.368
		10	0.18	0.105	0.255
	80	1	0.53	0.432	0.628
		2	0.49	0.392	0.588
		3	0.50	0.402	0.598
		4	0.52	0.422	0.618
		5	0.40	0.304	0.496
		6	0.43	0.333	0.527
		7	0.38	0.285	0.475
		8	0.34	0.247	0.433
		9	0.26	0.174	0.346
		10	0.29	0.201	0.379
	90	1	0.66	0.567	0.753
		2	0.69	0.599	0.781
		3	0.58	0.483	0.677
		4	0.47	0.372	0.568
		5	0.58	0.483	0.677
		6	0.51	0.412	0.608
		7	0.46	0.362	0.558
		8	0.41	0.314	0.506
		9	0.36	0.266	0.454
		10	0.39	0.294	0.486
	100	1	0.84	0.768	0.912
		2	0.56	0.463	0.657
		3	0.70	0.610	0.790
		4	0.54	0.442	0.638
		5	0.69	0.599	0.781
		6	0.55	0.452	0.648
		7	0.58	0.483	0.677
		8	0.55	0.452	0.648
		9	0.54	0.442	0.638
		10	0.36	0.266	0.454

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.04	0.002	0.078
		2	0.02	0.0	0.047
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.11	0.049	0.171
		2	0.07	0.020	0.120
		3	0.03	0.0	0.063
		4	0.02	0.0	0.047
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.18	0.105	0.255
		2	0.08	0.027	0.133
		3	0.09	0.034	0.146
		4	0.08	0.027	0.133
		5	0.09	0.034	0.146
		6	0.06	0.013	0.107
		7	0.02	0.0	0.047
		8	0.01	0.0	0.030
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	40	1	0.19	0.113	0.267
		2	0.10	0.041	0.159
		3	0.14	0.072	0.208
		4	0.11	0.049	0.171
		5	0.13	0.064	0.196
		6	0.13	0.064	0.196
		7	0.08	0.027	0.133
		8	0.06	0.013	0.107
		9	0.04	0.002	0.078
		10	0.02	0.0	0.047
	50	1	0.23	0.148	0.312
		2	0.24	0.156	0.324
		3	0.22	0.139	0.301
		4	0.29	0.201	0.379
		5	0.25	0.165	0.335
		6	0.18	0.105	0.255
		7	0.08	0.027	0.133
		8	0.12	0.056	0.184
		9	0.07	0.020	0.120
		10	0.02	0.0	0.047

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.33	0.238	0.422
		2	0.34	0.247	0.433
		3	0.21	0.130	0.290
		4	0.28	0.192	0.368
		5	0.20	0.122	0.278
		6	0.20	0.122	0.278
		7	0.17	0.096	0.244
		8	0.14	0.072	0.208
		9	0.14	0.072	0.208
		10	0.09	0.034	0.146
	70	1	0.39	0.294	0.486
		2	0.35	0.257	0.443
		3	0.39	0.294	0.486
		4	0.35	0.257	0.443
		5	0.28	0.192	0.368
		6	0.28	0.192	0.368
		7	0.23	0.148	0.312
		8	0.24	0.156	0.324
		9	0.26	0.174	0.346
		10	0.15	0.080	0.220
	80	1	0.52	0.422	0.618
		2	0.45	0.352	0.548
		3	0.45	0.352	0.548
		4	0.44	0.343	0.537
		5	0.31	0.219	0.401
		6	0.37	0.275	0.465
		7	0.34	0.247	0.433
		8	0.32	0.229	0.411
		9	0.28	0.192	0.368
		10	0.22	0.139	0.301
	90	1	0.60	0.504	0.696
		2	0.51	0.412	0.608
		3	0.48	0.382	0.578
		4	0.46	0.362	0.558
		5	0.55	0.452	0.648
		6	0.43	0.333	0.527
		7	0.36	0.266	0.454
		8	0.44	0.343	0.537
		9	0.30	0.210	0.390
		10	0.28	0.192	0.368
	100	1	0.64	0.546	0.734
		2	0.60	0.504	0.696
		3	0.56	0.463	0.657
		4	0.66	0.567	0.753
		5	0.52	0.422	0.618
		6	0.48	0.382	0.578
		7	0.53	0.432	0.628
		8	0.39	0.294	0.486
		9	0.47	0.372	0.568
		10	0.38	0.285	0.475

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	10	1	0.02	0.0	0.047
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.06	0.013	0.107
		2	0.03	0.0	0.063
		3	0.04	0.002	0.078
		4	0.04	0.002	0.078
		5	0.01	0.0	0.030
		6	0.02	0.0	0.047
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.12	0.056	0.184
		2	0.11	0.049	0.171
		3	0.08	0.027	0.133
		4	0.04	0.002	0.078
		5	0.04	0.002	0.078
		6	0.06	0.013	0.107
		7	0.04	0.002	0.078
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.01	0.0	0.030
	40	1	0.17	0.096	0.244
		2	0.13	0.064	0.196
		3	0.12	0.056	0.184
		4	0.14	0.072	0.208
		5	0.14	0.072	0.208
		6	0.10	0.041	0.159
		7	0.06	0.013	0.107
		8	0.06	0.013	0.107
		9	0.05	0.007	0.093
		10	0.02	0.0	0.047
	50	1	0.18	0.105	0.255
		2	0.23	0.148	0.312
		3	0.11	0.049	0.171
		4	0.18	0.105	0.255
		5	0.10	0.041	0.159
		6	0.12	0.056	0.184
		7	0.10	0.041	0.159
		8	0.10	0.041	0.159
		9	0.04	0.002	0.078
		10	0.03	0.0	0.063

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	60	1	0.36	0.266	0.454
		2	0.29	0.201	0.379
		3	0.26	0.174	0.346
		4	0.24	0.156	0.324
		5	0.20	0.122	0.278
		6	0.21	0.130	0.290
		7	0.17	0.096	0.244
		8	0.13	0.064	0.196
		9	0.12	0.056	0.184
		10	0.10	0.041	0.159
	70	1	0.36	0.266	0.454
		2	0.47	0.372	0.568
		3	0.37	0.275	0.465
		4	0.33	0.238	0.422
		5	0.28	0.192	0.368
		6	0.29	0.201	0.379
		7	0.15	0.080	0.220
		8	0.17	0.096	0.244
		9	0.15	0.080	0.220
		10	0.09	0.034	0.146
	80	1	0.42	0.323	0.517
		2	0.38	0.285	0.475
		3	0.42	0.323	0.517
		4	0.27	0.183	0.357
		5	0.31	0.219	0.401
		6	0.27	0.183	0.357
		7	0.26	0.174	0.346
		8	0.29	0.201	0.379
		9	0.23	0.148	0.312
		10	0.19	0.113	0.267
	90	1	0.53	0.432	0.628
		2	0.46	0.362	0.558
		3	0.50	0.402	0.598
		4	0.42	0.323	0.517
		5	0.31	0.219	0.401
		6	0.42	0.323	0.517
		7	0.35	0.257	0.443
		8	0.35	0.257	0.443
		9	0.28	0.192	0.368
		10	0.28	0.192	0.368
	100	1	0.52	0.422	0.618
		2	0.58	0.483	0.677
		3	0.46	0.362	0.558
		4	0.40	0.304	0.496
		5	0.44	0.343	0.537
		6	0.39	0.294	0.486
		7	0.41	0.314	0.506
		8	0.34	0.247	0.433
		9	0.31	0.219	0.401
		10	0.31	0.219	0.401

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
120	10	1	0.01	0.0	0.030
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.12	0.056	0.184
		2	0.05	0.007	0.093
		3	0.05	0.007	0.093
		4	0.03	0.0	0.063
		5	0.02	0.0	0.047
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.13	0.064	0.196
		2	0.06	0.013	0.107
		3	0.05	0.007	0.093
		4	0.06	0.013	0.107
		5	0.03	0.0	0.063
		6	0.05	0.007	0.093
		7	0.02	0.0	0.047
		8	0.01	0.0	0.030
		9	0.03	0.0	0.063
		10	0.0	0.0	0.0
	40	1	0.16	0.088	0.232
		2	0.10	0.041	0.15[illegible]
		3	0.14	0.072	0.20[illegible]
		4	0.12	0.056	0.18[illegible]
		5	0.13	0.064	0.196
		6	0.04	0.002	0.078
		7	0.03	0.0	0.063
		8	0.08	0.027	0.133
		9	0.04	0.002	0.078
		10	0.04	0.002	0.078
	50	1	0.18	0.105	0.255
		2	0.20	0.122	0.278
		3	0.13	0.064	0.196
		4	0.11	0.049	0.171
		5	0.16	0.088	0.232
		6	0.14	0.072	0.208
		7	0.12	0.056	0.184
		8	0.05	0.007	0.093
		9	0.08	0.027	0.133
		10	0.03	0.0	0.063

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
120	60	1	0.25	0.165	0.335
		2	0.25	0.165	0.335
		3	0.13	0.064	0.196
		4	0.16	0.088	0.232
		5	0.12	0.056	0.184
		6	0.20	0.122	0.278
		7	0.13	0.064	0.196
		8	0.14	0.072	0.208
		9	0.08	0.027	0.133
		10	0.05	0.007	0.093
	70	1	0.35	0.257	0.443
		2	0.24	0.156	0.324
		3	0.31	0.219	0.401
		4	0.18	0.105	0.255
		5	0.21	0.130	0.290
		6	0.21	0.130	0.290
		7	0.17	0.096	0.244
		8	0.17	0.096	0.244
		9	0.13	0.064	0.196
		10	0.10	0.041	0.159
	80	1	0.33	0.238	0.422
		2	0.30	0.210	0.390
		3	0.35	0.257	0.443
		4	0.34	0.247	0.433
		5	0.25	0.165	0.335
		6	0.30	0.210	0.390
		7	0.24	0.156	0.324
		8	0.18	0.105	0.255
		9	0.17	0.096	0.244
		10	0.16	0.088	0.232
	90	1	0.42	0.323	0.517
		2	0.44	0.343	0.537
		3	0.41	0.314	0.506
		4	0.36	0.266	0.454
		5	0.44	0.343	0.537
		6	0.33	0.238	0.422
		7	0.29	0.201	0.379
		8	0.25	0.165	0.335
		9	0.22	0.139	0.301
		10	0.20	0.122	0.278
	100	1	0.59	0.494	0.686
		2	0.42	0.323	0.517
		3	0.54	0.442	0.638
		4	0.33	0.238	0.422
		5	0.47	0.372	0.568
		6	0.39	0.294	0.486
		7	0.36	0.266	0.454
		8	0.38	0.285	0.475
		9	0.36	0.266	0.454
		10	0.29	0.201	0.379

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	60	1	0.91	0.854	0.966
	70	1	0.97	0.937	1.000
	80	1	1.00	1.000	1.000
	90	1	1.00	1.000	1.000
	100	1	1.00	1.000	1.000

HIT PROBABILITIES FOR 300KT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE P ERCN TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.12	0.056	0.184
		2	0.05	0.007	0.093
		3	0.04	0.002	0.078
		4	0.03	0.0	0.063
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.32	0.229	0.411
		2	0.25	0.165	0.335
		3	0.14	0.072	0.208
		4	0.11	0.049	0.171
		5	0.09	0.034	0.146
		6	0.05	0.007	0.093
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.42	0.323	0.517
		2	0.31	0.219	0.401
		3	0.25	0.165	0.335
		4	0.22	0.139	0.301
		5	0.21	0.130	0.290
		6	0.11	0.049	0.171
		7	0.13	0.064	0.196
		8	0.08	0.027	0.133
		9	0.05	0.007	0.093
		10	0.03	0.0	0.063
	40	1	0.61	0.514	0.706
		2	0.56	0.463	0.657
		3	0.38	0.285	0.475
		4	0.35	0.257	0.443
		5	0.31	0.219	0.401
		6	0.30	0.210	0.390
		7	0.23	0.148	0.312
		8	0.19	0.113	0.267
		9	0.12	0.056	0.184
		10	0.03	0.0	0.063
	50	1	0.67	0.578	0.762
		2	0.60	0.504	0.696
		3	0.67	0.578	0.762
		4	0.46	0.362	0.558
		5	0.50	0.402	0.598
		6	0.44	0.343	0.537
		7	0.38	0.285	0.475
		8	0.30	0.210	0.390
		9	0.27	0.183	0.357
		10	0.10	0.041	0.159

HIT PROBABILITIES FOR 300K BOMB, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS	PROBABILITY OF B BOMBS WITHIN B METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	0.83	0.756	0.904
		2	0.69	0.599	0.781
		3	0.71	0.621	0.799
		4	0.59	0.494	0.686
		5	0.67	0.578	0.762
		6	0.48	0.382	0.578
		7	0.54	0.442	0.638
		8	0.47	0.372	0.568
		9	0.41	0.314	0.506
		10	0.31	0.219	0.401
	70	1	0.93	0.880	0.980
		2	0.81	0.733	0.887
		3	0.84	0.768	0.912
		4	0.77	0.688	0.852
		5	0.76	0.676	0.844
		6	0.69	0.599	0.781
		7	0.68	0.589	0.771
		8	0.55	0.452	0.648
		9	0.57	0.473	0.667
		10	0.42	0.323	0.517
	80	1	0.96	0.922	0.998
		2	0.87	0.804	0.936
		3	0.87	0.804	0.936
		4	0.87	0.804	0.936
		5	0.85	0.780	0.920
		6	0.81	0.733	0.887
		7	0.79	0.710	0.870
		8	0.73	0.699	0.861
		9	0.66	0.567	0.753
		10	0.57	0.473	0.667
	90	1	0.95	0.907	0.993
		2	0.99	0.970	1.000
		3	0.95	0.907	0.993
		4	0.91	0.854	0.966
		5	0.85	0.780	0.920
		6	0.94	0.893	0.987
		7	0.91	0.854	0.966
		8	0.84	0.768	0.912
		9	0.84	0.768	0.912
		10	0.69	0.599	0.781
	100	1	0.97	0.937	1.000
		2	0.98	0.953	1.000
		3	0.98	0.953	1.000
		4	0.96	0.922	0.998
		5	0.92	0.867	0.973
		6	0.96	0.922	0.998
		7	0.94	0.893	0.987
		8	0.93	0.880	0.980
		9	0.83	0.756	0.904
		10	0.78	0.699	0.861

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	10	1	0.12	0.056	0.184
	20	1	0.24	0.156	0.324
	30	1	0.36	0.266	0.454
	40	1	0.38	0.285	0.475
	50	1	0.65	0.557	0.743

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	60	1	0.69	0.599	0.781
	70	1	0.80	0.722	0.878
	80	1	0.88	0.816	0.944
	90	1	0.94	0.893	0.987
	100	1	0.98	0.953	1.000

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	10	1	0.11	0.049	0.171
	20	1	0.23	0.148	0.312
	30	1	0.20	0.122	0.278
	40	1	0.36	0.266	0.454
	50	1	0.56	0.463	0.657

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	60	1	0.61	0.514	0.706
	70	1	0.73	0.643	0.817
	80	1	0.82	0.745	0.895
	90	1	0.82	0.745	0.895
	100	1	0.88	0.816	0.944

HIT PROBABILITIES FOR BOOKLET, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN B METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.03	0.0	0.062
		2	0.06	0.013	0.107
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.11	0.049	0.171
		2	0.14	0.072	0.208
		3	0.06	0.013	0.107
		4	0.05	0.007	0.093
		5	0.05	0.007	0.093
		6	0.01	0.0	0.030
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.21	0.130	0.290
		2	0.17	0.096	0.244
		3	0.21	0.130	0.290
		4	0.10	0.041	0.159
		5	0.15	0.080	0.220
		6	0.10	0.041	0.159
		7	0.03	0.0	0.063
		8	0.04	0.002	0.078
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.29	0.201	0.379
		2	0.29	0.201	0.379
		3	0.25	0.165	0.335
		4	0.16	0.088	0.232
		5	0.17	0.096	0.244
		6	0.12	0.056	0.184
		7	0.13	0.064	0.196
		8	0.12	0.056	0.184
		9	0.04	0.002	0.078
		10	0.05	0.007	0.093
	50	1	0.45	0.352	0.548
		2	0.46	0.362	0.558
		3	0.29	0.201	0.379
		4	0.22	0.139	0.301
		5	0.27	0.183	0.357
		6	0.25	0.165	0.335
		7	0.26	0.174	0.346
		8	0.19	0.113	0.267
		9	0.13	0.064	0.196
		10	0.11	0.049	0.171

HIT PROBABILITIES FOR 300KT, CLUSTER BOMB FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R OR MORE BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.44	0.362	0.558
		2	0.39	0.294	0.486
		3	0.43	0.333	0.527
		4	0.36	0.266	0.454
		5	0.29	0.294	0.486
		6	0.31	0.219	0.401
		7	0.35	0.257	0.443
		8	0.25	0.165	0.335
		9	0.17	0.096	0.244
		10	0.23	0.148	0.312
	70	1	0.63	0.535	0.725
		2	0.55	0.452	0.648
		3	0.42	0.323	0.517
		4	0.45	0.362	0.558
		5	0.54	0.442	0.638
		6	0.42	0.323	0.517
		7	0.37	0.275	0.465
		8	0.34	0.247	0.433
		9	0.29	0.201	0.379
		10	0.23	0.148	0.312
	80	1	0.70	0.610	0.790
		2	0.62	0.525	0.715
		3	0.52	0.422	0.618
		4	0.56	0.463	0.657
		5	0.49	0.392	0.588
		6	0.49	0.392	0.588
		7	0.56	0.463	0.657
		8	0.40	0.304	0.496
		9	0.37	0.275	0.465
		10	0.36	0.266	0.454
	90	1	0.81	0.733	0.887
		2	0.79	0.710	0.870
		3	0.71	0.621	0.799
		4	0.71	0.621	0.799
		5	0.65	0.557	0.743
		6	0.55	0.452	0.648
		7	0.57	0.473	0.667
		8	0.54	0.442	0.638
		9	0.47	0.372	0.568
		10	0.39	0.294	0.486
	100	1	0.81	0.733	0.887
		2	0.81	0.733	0.887
		3	0.72	0.632	0.808
		4	0.74	0.654	0.826
		5	0.73	0.643	0.817
		6	0.65	0.557	0.743
		7	0.72	0.632	0.808
		8	0.60	0.504	0.696
		9	0.57	0.473	0.667
		10	0.55	0.452	0.648

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	10	1	0.03	0.0	0.063
	20	1	0.11	0.049	0.171
	30	1	0.22	0.139	0.301
	40	1	0.30	0.210	0.390
	50	1	0.36	0.266	0.454

BILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
RGET LOCATION ERROR 40 METERS

NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
1	0.34	0.247	0.433
1	0.55	0.452	0.648
1	0.65	0.557	0.743
1	0.74	0.654	0.826
1	0.74	0.654	0.826

HIT PROBABILITIES FOR BOCKNUT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	60	1	0.42	0.323	0.517
	70	1	0.46	0.362	0.558
	80	1	0.52	0.422	0.618
	90	1	0.63	0.535	0.725
	100	1	0.61	0.514	0.706

HIT PROBABILITIES FOR 300KLBT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION: FREE, 40 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS	PROBABILITY OF BOMBS WITHIN METERS OF TGT	95% CONFIDENCE LIMITS IN PROBABILITY LOWER	UPPER
100	10	1	0.06	0.013	0.107
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.10	0.041	0.159
		2	0.06	0.013	0.107
		3	0.05	0.007	0.093
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.09	0.034	0.146
		2	0.05	0.007	0.093
		3	0.06	0.013	0.107
		4	0.05	0.007	0.093
		5	0.03	0.0	0.063
		6	0.05	0.007	0.093
		7	0.06	0.013	0.107
		8	0.02	0.0	0.047
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	40	1	0.28	0.192	0.368
		2	0.14	0.072	0.208
		3	0.13	0.064	0.196
		4	0.14	0.072	0.208
		5	0.14	0.072	0.208
		6	0.08	0.027	0.133
		7	0.05	0.007	0.093
		8	0.03	0.0	0.063
		9	0.04	0.002	0.078
		10	0.02	0.0	0.047
	50	1	0.31	0.219	0.401
		2	0.17	0.096	0.244
		3	0.20	0.122	0.278
		4	0.16	0.088	0.232
		5	0.17	0.096	0.244
		6	0.06	0.013	0.107
		7	0.12	0.056	0.184
		8	0.07	0.020	0.120
		9	0.06	0.013	0.107
		10	0.04	0.002	0.078

HIT PROBABILITIES FOR ROCKET, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE TO TARGET	NUMBER OF BOMBS	PROBABILITY OF BOMBS WITHIN METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.31	0.219	0.401
		2	0.21	0.130	0.290
		3	0.26	0.165	0.335
		4	0.26	0.165	0.335
		5	0.17	0.096	0.244
		6	0.26	0.165	0.335
		7	0.11	0.049	0.171
		8	0.17	0.096	0.244
		9	0.12	0.056	0.184
		10	0.09	0.034	0.146
	70	1	0.46	0.362	0.558
		2	0.36	0.266	0.454
		3	0.35	0.257	0.443
		4	0.28	0.192	0.368
		5	0.33	0.238	0.422
		6	0.20	0.122	0.278
		7	0.22	0.139	0.301
		8	0.13	0.064	0.196
		9	0.14	0.072	0.208
		10	0.08	0.027	0.133
	80	1	0.55	0.452	0.648
		2	0.45	0.352	0.548
		3	0.36	0.265	0.454
		4	0.41	0.314	0.506
		5	0.39	0.294	0.486
		6	0.35	0.257	0.443
		7	0.27	0.183	0.357
		8	0.33	0.238	0.422
		9	0.21	0.130	0.290
		10	0.14	0.072	0.208
	90	1	0.56	0.463	0.657
		2	0.53	0.432	0.628
		3	0.49	0.392	0.588
		4	0.44	0.343	0.537
		5	0.45	0.352	0.548
		6	0.39	0.294	0.486
		7	0.39	0.294	0.486
		8	0.34	0.247	0.433
		9	0.29	0.201	0.379
		10	0.26	0.174	0.346
	100	1	0.64	0.546	0.734
		2	0.54	0.442	0.638
		3	0.47	0.372	0.568
		4	0.65	0.557	0.743
		5	0.45	0.352	0.548
		6	0.43	0.333	0.527
		7	0.43	0.333	0.527
		8	0.37	0.275	0.465
		9	0.30	0.210	0.390
		10	0.24	0.156	0.324

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	10	1	0.05	0.007	0.093
	20	1	0.16	0.088	0.232
	30	1	0.16	0.088	0.232
	40	1	0.14	0.072	0.208
	50	1	0.21	0.130	0.290

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 40 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	60	1	0.33	0.238	0.422
	70	1	0.37	0.275	0.465
	80	1	0.50	0.402	0.598
	90	1	0.57	0.473	0.667
	100	1	0.53	0.432	0.628

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	10	1	0.0	0.0	0.0
	20	1	0.05	0.007	0.093
	30	1	0.08	0.027	0.133
	40	1	0.15	0.080	0.220
	50	1	0.28	0.192	0.368

HIT PROBABILITIES FOR BOOKNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	60	1	0.36	0.266	0.454
	70	1	0.60	0.504	0.696
	80	1	0.76	0.676	0.844
	90	1	0.90	0.841	0.959
	100	1	0.96	0.922	0.998

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.0	0.0	0.0
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.02	0.0	0.047
		2	0.03	0.0	0.063
		3	0.01	0.0	0.030
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.11	0.049	0.171
		2	0.02	0.0	0.047
		3	0.07	0.020	0.120
		4	0.02	0.0	0.047
		5	0.03	0.0	0.063
		6	0.02	0.0	0.047
		7	0.01	0.0	0.030
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.19	0.113	0.267
		2	0.15	0.080	0.220
		3	0.08	0.027	0.133
		4	0.08	0.027	0.133
		5	0.08	0.027	0.133
		6	0.04	0.002	0.078
		7	0.03	0.0	0.063
		8	0.02	0.0	0.047
		9	0.01	0.0	0.030
		10	0.01	0.0	0.030
	50	1	0.23	0.148	0.312
		2	0.13	0.064	0.196
		3	0.16	0.088	0.232
		4	0.10	0.041	0.159
		5	0.14	0.072	0.208
		6	0.12	0.056	0.184
		7	0.06	0.013	0.107
		8	0.06	0.013	0.107
		9	0.08	0.027	0.133
		10	0.01	0.0	0.030

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	0.34	0.247	0.433
		2	0.26	0.174	0.346
		3	0.25	0.165	0.335
		4	0.19	0.113	0.267
		5	0.20	0.122	0.278
		6	0.16	0.088	0.232
		7	0.12	0.056	0.184
		8	0.08	0.027	0.133
		9	0.08	0.027	0.133
		10	0.10	0.041	0.159
	70	1	0.56	0.463	0.657
		2	0.43	0.333	0.527
		3	0.37	0.275	0.465
		4	0.41	0.314	0.506
		5	0.26	0.174	0.346
		6	0.27	0.183	0.357
		7	0.14	0.072	0.208
		8	0.18	0.105	0.255
		9	0.20	0.122	0.278
		10	0.15	0.080	0.220
	80	1	0.65	0.557	0.743
		2	0.48	0.382	0.578
		3	0.49	0.392	0.588
		4	0.45	0.362	0.558
		5	0.38	0.285	0.475
		6	0.41	0.314	0.506
		7	0.27	0.183	0.357
		8	0.24	0.156	0.324
		9	0.22	0.139	0.301
		10	0.19	0.113	0.267
	90	1	0.79	0.710	0.870
		2	0.75	0.665	0.835
		3	0.70	0.610	0.790
		4	0.52	0.422	0.618
		5	0.53	0.432	0.628
		6	0.50	0.402	0.598
		7	0.54	0.442	0.638
		8	0.45	0.352	0.548
		9	0.39	0.294	0.486
		10	0.29	0.201	0.379
	100	1	0.88	0.816	0.944
		2	0.73	0.643	0.817
		3	0.71	0.621	0.799
		4	0.72	0.632	0.808
		5	0.69	0.599	0.781
		6	0.61	0.514	0.706
		7	0.73	0.643	0.817
		8	0.60	0.504	0.696
		9	0.46	0.362	0.558
		10	0.39	0.294	0.486

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	10	1	0.04	0.002	0.078
	20	1	0.04	0.002	0.078
	30	1	0.14	0.072	0.208
	40	1	0.17	0.096	0.244
	50	1	0.34	0.247	0.433

HIT PROBABILITIES FOR BOCKNUT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	60	1	0.34	0.247	0.433
	70	1	0.47	0.372	0.568
	80	1	0.65	0.557	0.743
	90	1	0.67	0.573	0.762
	100	1	0.84	0.768	0.912

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 30 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	10	1	0.03	0.0	0.063
	20	1	0.09	0.034	0.146
	30	1	0.11	0.049	0.171
	40	1	0.22	0.139	0.301
	50	1	0.29	0.201	0.379

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	60	1	0.47	0.372	0.568
	70	1	0.42	0.323	0.517
	80	1	0.53	0.432	0.628
	90	1	0.65	0.557	0.743
	100	1	0.66	0.567	0.753

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.0	0.0	0.0
		2	0.01	0.0	0.030
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.09	0.034	0.146
		2	0.06	0.013	0.107
		3	0.0	0.0	0.0
		4	0.04	0.002	0.078
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.14	0.072	0.208
		2	0.11	0.049	0.171
		3	0.08	0.027	0.133
		4	0.02	0.0	0.047
		5	0.01	0.0	0.030
		6	0.02	0.0	0.047
		7	0.04	0.002	0.078
		8	0.01	0.0	0.030
		9	0.01	0.0	0.030
		10	0.01	0.0	0.030
	40	1	0.16	0.088	0.232
		2	0.12	0.056	0.184
		3	0.10	0.041	0.159
		4	0.13	0.064	0.196
		5	0.06	0.013	0.107
		6	0.07	0.020	0.120
		7	0.07	0.020	0.120
		8	0.03	0.0	0.063
		9	0.04	0.002	0.078
		10	0.01	0.0	0.030
	50	1	0.33	0.238	0.422
		2	0.30	0.210	0.390
		3	0.15	0.080	0.220
		4	0.17	0.096	0.244
		5	0.11	0.049	0.171
		6	0.13	0.064	0.196
		7	0.13	0.064	0.196
		8	0.08	0.027	0.133
		9	0.08	0.027	0.133
		10	0.06	0.013	0.107

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.25	0.165	0.335
		2	0.30	0.210	0.390
		3	0.23	0.148	0.312
		4	0.26	0.174	0.346
		5	0.20	0.122	0.278
		6	0.18	0.105	0.255
		7	0.22	0.139	0.301
		8	0.12	0.056	0.184
		9	0.06	0.013	0.107
		10	0.08	0.027	0.133
	70	1	0.39	0.294	0.486
		2	0.47	0.372	0.568
		3	0.33	0.238	0.422
		4	0.24	0.156	0.324
		5	0.31	0.219	0.401
		6	0.23	0.148	0.312
		7	0.25	0.165	0.335
		8	0.15	0.080	0.220
		9	0.12	0.056	0.184
		10	0.09	0.034	0.146
	80	1	0.46	0.362	0.558
		2	0.39	0.294	0.486
		3	0.32	0.229	0.411
		4	0.35	0.257	0.443
		5	0.32	0.229	0.411
		6	0.33	0.238	0.422
		7	0.35	0.257	0.443
		8	0.31	0.219	0.401
		9	0.21	0.130	0.290
		10	0.20	0.122	0.278
	90	1	0.62	0.525	0.71[illegible]
		2	0.59	0.494	0.68[illegible]
		3	0.47	0.372	0.568
		4	0.55	0.452	0.648
		5	0.42	0.323	0.517
		6	0.38	0.285	0.475
		7	0.46	0.362	0.558
		8	0.38	0.285	0.475
		9	0.34	0.247	0.433
		10	0.22	0.139	0.301
	100	1	0.61	0.514	0.706
		2	0.61	0.514	0.706
		3	0.52	0.422	0.618
		4	0.58	0.483	0.677
		5	0.55	0.452	0.648
		6	0.49	0.392	0.588
		7	0.46	0.362	0.558
		8	0.32	0.229	0.411
		9	0.37	0.275	0.465
		10	0.43	0.333	0.527

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBAEILITY LOWER	UPPER
80	10	1	0.03	0.0	0.063
	20	1	0.05	0.007	0.093
	30	1	0.20	0.122	0.278
	40	1	0.22	0.139	0.301
	50	1	0.26	0.174	0.346

TIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET. ET.
CE LOCATION ERROR 80 METERS

NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER	TS ER
1	0.26	0.174	0.346	63
1	0.41	0.314	0.506	33
1	0.47	0.372	0.568	59
1	0.53	0.432	0.628	24
1	0.62	0.525	0.715	90

HIT PROBABILITIES FOR BOOKNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	60	1	0.31	0.219	0.401
	70	1	0.28	0.192	0.368
	80	1	0.40	0.304	0.496
	90	1	0.53	0.432	0.626
	100	1	0.53	0.432	0.628

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.01	0.0	0.030
		2	0.04	0.002	0.078
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.06	0.013	0.107
		2	0.03	0.0	0.063
		3	0.01	0.0	0.030
		4	0.01	0.0	0.030
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.02	0.0	0.047
		2	0.07	0.020	0.120
		3	0.03	0.0	0.063
		4	0.05	0.007	0.093
		5	0.03	0.0	0.063
		6	0.04	0.002	0.078
		7	0.02	0.0	0.047
		8	0.01	0.0	0.030
		9	0.01	0.0	0.030
		10	0.01	0.0	0.030
	40	1	0.18	0.105	0.255
		2	0.07	0.020	0.120
		3	0.14	0.072	0.208
		4	0.09	0.034	0.146
		5	0.09	0.034	0.146
		6	0.03	0.0	0.063
		7	0.05	0.007	0.093
		8	0.03	0.0	0.063
		9	0.06	0.013	0.107
		10	0.01	0.0	0.030
	50	1	0.22	0.139	0.301
		2	0.18	0.105	0.255
		3	0.16	0.088	0.232
		4	0.17	0.096	0.244
		5	0.14	0.072	0.208
		6	0.04	0.002	0.078
		7	0.12	0.056	0.184
		8	0.07	0.020	0.120
		9	0.06	0.013	0.107
		10	0.03	0.0	0.063

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.26	0.174	0.346
		2	0.20	0.122	0.278
		3	0.17	0.096	0.244
		4	0.18	0.105	0.255
		5	0.15	0.080	0.220
		6	0.12	0.056	0.184
		7	0.10	0.041	0.159
		8	0.13	0.064	0.196
		9	0.06	0.013	0.107
		10	0.06	0.013	0.107
	70	1	0.35	0.257	0.443
		2	0.27	0.183	0.357
		3	0.25	0.165	0.335
		4	0.14	0.072	0.208
		5	0.28	0.192	0.368
		6	0.20	0.122	0.278
		7	0.18	0.105	0.255
		8	0.09	0.034	0.146
		9	0.11	0.049	0.171
		10	0.09	0.034	0.146
	80	1	0.45	0.352	0.548
		2	0.33	0.238	0.422
		3	0.27	0.183	0.357
		4	0.29	0.201	0.379
		5	0.35	0.257	0.443
		6	0.27	0.183	0.357
		7	0.22	0.139	0.301
		8	0.16	0.088	0.232
		9	0.18	0.105	0.255
		10	0.15	0.080	0.220
	90	1	0.40	0.304	0.496
		2	0.38	0.285	0.475
		3	0.43	0.333	0.527
		4	0.41	0.314	0.506
		5	0.33	0.238	0.422
		6	0.37	0.275	0.465
		7	0.25	0.165	0.335
		8	0.28	0.192	0.368
		9	0.22	0.139	0.301
		10	0.19	0.113	0.267
	100	1	0.56	0.463	0.657
		2	0.47	0.372	0.568
		3	0.38	0.285	0.475
		4	0.50	0.402	0.598
		5	0.35	0.257	0.443
		6	0.37	0.275	0.465
		7	0.32	0.229	0.411
		8	0.22	0.139	0.301
		9	0.22	0.139	0.301
		10	0.18	0.105	0.255

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	10	1	0.01	0.0	0.030
	20	1	0.07	0.020	0.120
	30	1	0.09	0.034	0.146
	40	1	0.10	0.041	0.159
	50	1	0.18	0.105	0.255

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 80 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	60	1	0.29	0.201	0.379
	70	1	0.34	0.247	0.433
	80	1	0.39	0.294	0.486
	90	1	0.41	0.314	0.506
	100	1	0.43	0.333	0.527

HIT PROBABILITIES FOR BOOKNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	10	1	0.0	0.0	0.0
	20	1	0.0	0.0	0.0
	30	1	0.01	0.0	0.030
	40	1	0.03	0.0	0.063
	50	1	0.09	0.034	0.146

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	60	1	0.15	0.080	0.220
	70	1	0.31	0.219	0.401
	80	1	0.48	0.382	0.578
	90	1	0.58	0.483	0.677
	100	1	0.76	0.676	0.844

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.0	0.0	0.0
	20	1	0.02	0.0	0.047
	30	1	0.03	0.0	0.063
	40	1	0.07	0.020	0.120
	50	1	0.13	0.064	0.196

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	0.21	0.130	0.290
	70	1	0.34	0.247	0.433
	80	1	0.44	0.343	0.537
	90	1	0.48	0.382	0.578
	100	1	0.68	0.589	0.771

ILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
RGET LOCATION ERROR 100 METERS

NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
1	0.0	0.0	0.0
1	0.0	0.0	0.0
1	0.08	0.027	0.133
1	0.07	0.020	0.120
1	0.25	0.165	0.335

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.04	0.002	0.078
	20	1	0.03	0.0	0.063
	30	1	0.10	0.041	0.159
	40	1	0.13	0.064	0.196
	50	1	0.19	0.113	0.267

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.25	0.165	0.335
	70	1	0.30	0.210	0.390
	80	1	0.38	0.285	0.475
	90	1	0.46	0.362	0.558
	100	1	0.57	0.473	0.667

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF 3 BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	10	1	0.02	0.0	0.047
	20	1	0.02	0.0	0.047
	30	1	0.16	0.088	0.232
	40	1	0.13	0.064	0.196
	50	1	0.16	0.088	0.232

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	60	1	0.22	0.139	0.301
	70	1	0.28	0.192	0.368
	80	1	0.36	0.266	0.454
	90	1	0.47	0.372	0.568
	100	1	0.47	0.372	0.568

IES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET. T.
LOCATION ERROR 100 METERS

NBER OF MBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER	S R
1	0.03	0.0	0.063	0
1	0.06	0.013	0.107	4
1	0.07	0.020	0.120	3
1	0.15	0.080	0.220	6
1	0.15	0.080	0.220	6

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
120	10	1	0.0	0.0	0.0
	20	1	0.05	0.007	0.093
	30	1	0.04	0.002	0.078
	40	1	0.12	0.056	0.184
	50	1	0.19	0.113	0.267

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 100 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
120	60	1	0.09	0.034	0.146
	70	1	0.21	0.130	0.290
	80	1	0.24	0.156	0.324
	90	1	0.29	0.201	0.379
	100	1	0.38	0.285	0.475

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.34	0.247	0.433
		2	0.11	0.049	0.171
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.77	0.688	0.852
		2	0.46	0.362	0.558
		3	0.22	0.139	0.301
		4	0.02	0.0	0.047
		5	0.02	0.0	0.047
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.93	0.880	0.980
		2	0.85	0.780	0.920
		3	0.62	0.525	0.715
		4	0.46	0.362	0.558
		5	0.18	0.105	0.255
		6	0.08	0.027	0.133
		7	0.03	0.0	0.063
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	1.00	1.000	1.000
		2	0.95	0.907	0.993
		3	0.93	0.880	0.980
		4	0.76	0.699	0.861
		5	0.53	0.432	0.628
		6	0.40	0.304	0.496
		7	0.23	0.148	0.312
		8	0.08	0.027	0.133
		9	0.02	0.0	0.047
		10	0.01	0.0	0.030
	50	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.97	0.937	1.000
		5	0.86	0.792	0.928
		6	0.84	0.768	0.912
		7	0.64	0.546	0.734
		8	0.27	0.183	0.357
		9	0.12	0.056	0.184
		10	0.03	0.0	0.063

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.99	0.970	1.000
		4	0.99	0.970	1.000
		5	0.97	0.937	1.000
		6	0.86	0.792	0.928
		7	0.83	0.756	0.904
		8	0.62	0.525	0.715
		9	0.39	0.294	0.486
		10	0.13	0.064	0.196
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	0.96	0.922	0.998
		8	0.90	0.841	0.959
		9	0.77	0.688	0.852
		10	0.30	0.210	0.390
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	0.99	0.970	1.000
		8	0.93	0.880	0.980
		9	0.85	0.780	0.920
		10	0.59	0.494	0.686
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	0.99	0.970	1.000
		8	1.00	1.000	1.000
		9	0.95	0.907	0.993
		10	0.74	0.654	0.826
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	0.99	0.970	1.000
		9	0.94	0.893	0.987
		10	0.88	0.816	0.944

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.12	0.056	0.184
		2	0.03	0.0	0.063
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.31	0.219	0.401
		2	0.16	0.088	0.232
		3	0.01	0.0	0.030
		4	0.03	0.0	0.063
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.45	0.352	0.548
		2	0.35	0.257	0.443
		3	0.21	0.130	0.290
		4	0.13	0.064	0.196
		5	0.05	0.007	0.093
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.64	0.546	0.734
		2	0.40	0.304	0.496
		3	0.35	0.257	0.443
		4	0.21	0.130	0.290
		5	0.17	0.096	0.244
		6	0.13	0.064	0.196
		7	0.05	0.007	0.093
		8	0.02	0.0	0.047
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.68	0.589	0.771
		2	0.61	0.514	0.706
		3	0.51	0.412	0.608
		4	0.48	0.382	0.578
		5	0.36	0.266	0.454
		6	0.24	0.156	0.324
		7	0.13	0.064	0.196
		8	0.06	0.013	0.107
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.82	0.745	0.895
		2	0.70	0.610	0.790
		3	0.57	0.473	0.667
		4	0.47	0.372	0.568
		5	0.45	0.352	0.548
		6	0.35	0.257	0.443
		7	0.20	0.122	0.278
		8	0.16	0.088	0.232
		9	0.10	0.041	0.159
		10	0.01	0.0	0.030
	70	1	0.81	0.733	0.887
		2	0.75	0.665	0.835
		3	0.76	0.676	0.844
		4	0.71	0.621	0.799
		5	0.43	0.333	0.527
		6	0.56	0.463	0.657
		7	0.32	0.229	0.411
		8	0.33	0.238	0.422
		9	0.22	0.139	0.301
		10	0.09	0.034	0.146
	80	1	0.95	0.907	0.993
		2	0.87	0.804	0.936
		3	0.81	0.733	0.887
		4	0.78	0.699	0.861
		5	0.58	0.483	0.677
		6	0.59	0.494	0.686
		7	0.58	0.483	0.677
		8	0.46	0.362	0.558
		9	0.30	0.210	0.390
		10	0.17	0.096	0.244
	90	1	0.94	0.893	0.987
		2	0.92	0.867	0.973
		3	0.82	0.745	0.895
		4	0.82	0.745	0.895
		5	0.84	0.768	0.912
		6	0.72	0.632	0.808
		7	0.57	0.473	0.667
		8	0.59	0.494	0.686
		9	0.39	0.294	0.486
		10	0.25	0.165	0.335
	100	1	0.98	0.953	1.000
		2	0.90	0.841	0.959
		3	0.91	0.854	0.966
		4	0.94	0.893	0.987
		5	0.87	0.804	0.936
		6	0.81	0.733	0.887
		7	0.72	0.632	0.808
		8	0.66	0.567	0.753
		9	0.58	0.483	0.677
		10	0.39	0.294	0.486

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN K METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.05	0.007	0.093
		2	0.01	0.0	0.030
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.16	0.088	0.232
		2	0.05	0.007	0.093
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.29	0.201	0.379
		2	0.12	0.056	0.184
		3	0.09	0.034	0.146
		4	0.04	0.002	0.078
		5	0.04	0.002	0.078
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.36	0.266	0.454
		2	0.17	0.096	0.244
		3	0.19	0.113	0.267
		4	0.12	0.056	0.184
		5	0.09	0.034	0.146
		6	0.07	0.020	0.120
		7	0.03	0.0	0.063
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.37	0.275	0.465
		2	0.32	0.229	0.411
		3	0.24	0.156	0.324
		4	0.29	0.201	0.379
		5	0.20	0.122	0.278
		6	0.13	0.064	0.196
		7	0.06	0.013	0.107
		8	0.03	0.0	0.063
		9	0.01	0.0	0.030
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 500KNOT, CLUSTER DROP FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.55	0.452	0.648
		2	0.49	0.392	0.588
		3	0.31	0.219	0.401
		4	0.28	0.192	0.368
		5	0.20	0.122	0.278
		6	0.14	0.072	0.208
		7	0.14	0.072	0.208
		8	0.09	0.034	0.146
		9	0.04	0.002	0.078
		10	0.0	0.0	0.0
	70	1	0.56	0.463	0.657
		2	0.44	0.343	0.537
		3	0.42	0.323	0.517
		4	0.38	0.285	0.475
		5	0.28	0.192	0.368
		6	0.27	0.183	0.357
		7	0.21	0.130	0.290
		8	0.12	0.056	0.184
		9	0.10	0.041	0.159
		10	0.06	0.013	0.107
	80	1	0.69	0.599	0.781
		2	0.56	0.463	0.657
		3	0.58	0.483	0.677
		4	0.50	0.402	0.598
		5	0.33	0.238	0.422
		6	0.36	0.266	0.454
		7	0.32	0.229	0.411
		8	0.24	0.156	0.324
		9	0.17	0.096	0.244
		10	0.09	0.034	0.146
	90	1	0.76	0.676	0.844
		2	0.66	0.567	0.753
		3	0.55	0.452	0.648
		4	0.50	0.402	0.598
		5	0.55	0.452	0.648
		6	0.41	0.314	0.506
		7	0.33	0.238	0.422
		8	0.35	0.257	0.443
		9	0.21	0.130	0.290
		10	0.14	0.072	0.208
	100	1	0.77	0.688	0.852
		2	0.67	0.578	0.762
		3	0.61	0.514	0.706
		4	0.72	0.632	0.808
		5	0.51	0.412	0.608
		6	0.47	0.372	0.568
		7	0.51	0.412	0.608
		8	0.30	0.210	0.390
		9	0.31	0.219	0.401
		10	0.21	0.130	0.290

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	10	1	0.56	0.463	0.657
		2	0.17	0.096	0.244
		3	0.03	0.0	0.063
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.98	0.953	1.000
		2	0.79	0.710	0.870
		3	0.49	0.392	0.588
		4	0.32	0.229	0.411
		5	0.09	0.034	0.146
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	0.95	0.907	0.993
		4	0.82	0.745	0.895
		5	0.58	0.483	0.677
		6	0.43	0.333	0.527
		7	0.24	0.156	0.324
		8	0.04	0.002	0.078
		9	0.01	0.0	0.030
		10	0.0	0.0	0.0
	40	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.99	0.970	1.000
		4	0.99	0.970	1.000
		5	0.94	0.893	0.987
		6	0.79	0.710	0.870
		7	0.71	0.621	0.799
		8	0.46	0.362	0.558
		9	0.18	0.105	0.255
		10	0.07	0.020	0.120
	50	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	0.96	0.922	0.998
		8	0.81	0.733	0.887
		9	0.60	0.504	0.696
		10	0.25	0.165	0.335

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
30	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	0.96	0.922	0.998
		9	0.86	0.792	0.928
		10	0.53	0.432	0.628
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	0.97	0.937	1.000
		10	0.78	0.699	0.861
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	1.00	1.000	1.000
		10	0.92	0.867	0.973
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	1.00	1.000	1.000
		10	1.00	1.000	1.000
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	1.00	1.000	1.000
		10	1.00	1.000	1.000

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.33	0.238	0.422
		2	0.12	0.056	0.184
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.85	0.780	0.920
		2	0.48	0.382	0.578
		3	0.19	0.113	0.267
		4	0.05	0.007	0.093
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.97	0.937	1.000
		2	0.92	0.867	0.973
		3	0.75	0.665	0.835
		4	0.43	0.333	0.527
		5	0.25	0.165	0.335
		6	0.06	0.013	0.107
		7	0.03	0.0	0.063
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	0.94	0.893	0.987
		4	0.81	0.733	0.887
		5	0.55	0.452	0.648
		6	0.39	0.294	0.486
		7	0.19	0.113	0.267
		8	0.04	0.002	0.078
		9	0.01	0.0	0.030
		10	0.0	0.0	0.0
	50	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.98	0.953	1.000
		4	0.98	0.953	1.000
		5	0.91	0.854	0.966
		6	0.79	0.710	0.870
		7	0.56	0.463	0.657
		8	0.31	0.219	0.401
		9	0.13	0.064	0.196
		10	0.03	0.0	0.063

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.93	0.880	0.980
		7	0.89	0.829	0.951
		8	0.66	0.567	0.753
		9	0.35	0.257	0.443
		10	0.05	0.007	0.093
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	0.98	0.953	1.000
		8	0.92	0.867	0.973
		9	0.57	0.473	0.667
		10	0.26	0.174	0.346
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	0.98	0.953	1.000
		9	0.86	0.792	0.928
		10	0.56	0.463	0.657
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	0.95	0.907	0.993
		10	0.71	0.621	0.799
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	0.99	0.970	1.000
		10	0.89	0.829	0.951

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	10	1	0.20	0.122	0.278
		2	0.06	0.013	0.107
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.60	0.504	0.696
		2	0.29	0.201	0.379
		3	0.12	0.056	0.184
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.90	0.841	0.959
		2	0.61	0.514	0.706
		3	0.44	0.343	0.537
		4	0.16	0.088	0.232
		5	0.06	0.013	0.107
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.98	0.953	1.000
		2	0.96	0.922	0.998
		3	0.75	0.665	0.835
		4	0.39	0.294	0.486
		5	0.26	0.174	0.346
		6	0.06	0.013	0.107
		7	0.01	0.0	0.030
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.99	0.970	1.000
		2	1.00	1.000	1.000
		3	0.92	0.867	0.973
		4	0.81	0.733	0.887
		5	0.61	0.514	0.706
		6	0.27	0.183	0.357
		7	0.13	0.064	0.196
		8	0.04	0.002	0.078
		9	0.01	0.0	0.030
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
50	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.98	0.953	1.000
		5	0.90	0.841	0.959
		6	0.78	0.699	0.861
		7	0.46	0.362	0.558
		8	0.23	0.148	0.312
		9	0.08	0.027	0.133
		10	0.0	0.0	0.0
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.98	0.953	1.000
		5	0.98	0.953	1.000
		6	0.92	0.867	0.973
		7	0.70	0.610	0.790
		8	0.50	0.402	0.598
		9	0.22	0.139	0.301
		10	0.07	0.020	0.120
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.99	0.970	1.000
		6	0.96	0.922	0.998
		7	0.91	0.854	0.966
		8	0.71	0.621	0.799
		9	0.50	0.402	0.598
		10	0.14	0.072	0.208
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	0.88	0.816	0.944
		9	0.69	0.599	0.781
		10	0.28	0.192	0.368
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	0.98	0.953	1.000
		8	0.96	0.922	0.998
		9	0.84	0.768	0.912
		10	0.56	0.463	0.657

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	10	1	0.25	0.165	0.335
		2	0.03	0.0	0.063
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.65	0.557	0.743
		2	0.15	0.080	0.220
		3	0.07	0.020	0.120
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.82	0.745	0.895
		2	0.48	0.382	0.578
		3	0.19	0.113	0.267
		4	0.06	0.013	0.107
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.96	0.922	0.998
		2	0.78	0.699	0.861
		3	0.57	0.473	0.667
		4	0.30	0.210	0.390
		5	0.07	0.020	0.120
		6	0.01	0.0	0.030
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.97	0.937	1.000
		2	0.95	0.907	0.993
		3	0.83	0.756	0.904
		4	0.60	0.504	0.696
		5	0.38	0.285	0.475
		6	0.07	0.020	0.120
		7	0.04	0.002	0.078
		8	0.02	0.0	0.047
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
60	60	1	0.99	0.970	1.000
		2	0.99	0.970	1.000
		3	0.90	0.841	0.959
		4	0.84	0.768	0.912
		5	0.61	0.514	0.706
		6	0.40	0.304	0.496
		7	0.17	0.096	0.244
		8	0.05	0.007	0.093
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.93	0.880	0.980
		5	0.96	0.922	0.998
		6	0.61	0.514	0.706
		7	0.45	0.352	0.548
		8	0.17	0.096	0.244
		9	0.10	0.041	0.159
		10	0.01	0.0	0.030
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.96	0.922	0.998
		6	0.87	0.804	0.936
		7	0.66	0.567	0.753
		8	0.41	0.314	0.506
		9	0.13	0.064	0.196
		10	0.04	0.002	0.078
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.99	0.970	1.000
		6	0.96	0.922	0.998
		7	0.87	0.804	0.936
		8	0.62	0.525	0.715
		9	0.36	0.266	0.454
		10	0.10	0.041	0.159
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	0.97	0.937	1.000
		8	0.72	0.632	0.808
		9	0.58	0.483	0.677
		10	0.18	0.105	0.255

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.14	0.072	0.208
		2	0.02	0.0	0.047
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.40	0.304	0.496
		2	0.07	0.020	0.120
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.73	0.643	0.817
		2	0.39	0.294	0.486
		3	0.04	0.002	0.078
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.90	0.841	0.959
		2	0.67	0.578	0.762
		3	0.31	0.219	0.401
		4	0.13	0.064	0.196
		5	0.04	0.002	0.078
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.94	0.893	0.987
		2	0.82	0.745	0.895
		3	0.57	0.473	0.667
		4	0.34	0.247	0.433
		5	0.17	0.096	0.244
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.98	0.953	1.000
		2	0.93	0.880	0.980
		3	0.81	0.733	0.887
		4	0.60	0.504	0.696
		5	0.40	0.304	0.496
		6	0.15	0.080	0.220
		7	0.06	0.013	0.107
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	1.00	1.000	1.000
		2	0.98	0.953	1.000
		3	0.94	0.893	0.987
		4	0.85	0.780	0.920
		5	0.64	0.546	0.734
		6	0.36	0.266	0.454
		7	0.20	0.122	0.278
		8	0.04	0.002	0.078
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.99	0.970	1.000
		4	0.92	0.867	0.973
		5	0.83	0.756	0.904
		6	0.64	0.546	0.734
		7	0.38	0.285	0.475
		8	0.13	0.105	0.255
		9	0.05	0.007	0.093
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.97	0.937	1.000
		5	0.95	0.907	0.993
		6	0.73	0.643	0.817
		7	0.62	0.525	0.715
		8	0.29	0.201	0.379
		9	0.09	0.034	0.146
		10	0.02	0.0	0.047
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.99	0.970	1.000
		6	0.97	0.937	1.000
		7	0.71	0.621	0.799
		8	0.42	0.323	0.517
		9	0.25	0.165	0.335
		10	0.05	0.007	0.093

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.13	0.064	0.196
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.24	0.156	0.324
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.51	0.412	0.608
		2	0.11	0.049	0.171
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.68	0.589	0.771
		2	0.32	0.229	0.411
		3	0.08	0.027	0.133
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.75	0.665	0.835
		2	0.46	0.362	0.558
		3	0.17	0.096	0.244
		4	0.05	0.007	0.093
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	10	1	0.09	0.034	0.146
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.28	0.192	0.368
		2	0.04	0.002	0.078
		3	0.02	0.0	0.047
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.63	0.535	0.725
		2	0.13	0.064	0.196
		3	0.06	0.013	0.107
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.84	0.768	0.912
		2	0.45	0.352	0.548
		3	0.20	0.122	0.278
		4	0.10	0.041	0.159
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.97	0.937	1.000
		2	0.79	0.710	0.870
		3	0.41	0.314	0.506
		4	0.12	0.056	0.184
		5	0.06	0.013	0.107
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
80	60	1	0.98	0.953	1.000
		2	0.90	0.841	0.959
		3	0.63	0.535	0.725
		4	0.43	0.333	0.527
		5	0.19	0.113	0.267
		6	0.08	0.027	0.133
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	0.99	0.970	1.000
		2	0.99	0.970	1.000
		3	0.87	0.804	0.936
		4	0.66	0.567	0.753
		5	0.39	0.294	0.486
		6	0.23	0.148	0.312
		7	0.09	0.034	0.146
		8	0.04	0.002	0.078
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	80	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	0.97	0.937	1.000
		4	0.85	0.780	0.920
		5	0.62	0.525	0.715
		6	0.45	0.352	0.548
		7	0.10	0.041	0.159
		8	0.07	0.020	0.120
		9	0.03	0.0	0.063
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.98	0.953	1.000
		4	0.92	0.867	0.973
		5	0.76	0.676	0.844
		6	0.61	0.514	0.706
		7	0.33	0.238	0.422
		8	0.14	0.072	0.208
		9	0.08	0.027	0.133
		10	0.0	0.0	0.0
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.99	0.970	1.000
		4	0.98	0.953	1.000
		5	0.90	0.841	0.959
		6	0.77	0.688	0.852
		7	0.59	0.494	0.686
		8	0.39	0.294	0.486
		9	0.06	0.013	0.107
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	10	1	0.08	0.027	0.133
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.27	0.183	0.357
		2	0.06	0.013	0.107
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.56	0.463	0.657
		2	0.15	0.080	0.220
		3	0.06	0.013	0.107
		4	0.02	0.0	0.047
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.81	0.733	0.887
		2	0.38	0.285	0.475
		3	0.14	0.072	0.208
		4	0.05	0.007	0.093
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.90	0.841	0.959
		2	0.60	0.504	0.696
		3	0.21	0.130	0.290
		4	0.10	0.041	0.159
		5	0.03	0.0	0.063
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
90	60	1	0.99	0.970	1.000
		2	0.82	0.745	0.895
		3	0.59	0.494	0.686
		4	0.20	0.122	0.278
		5	0.13	0.064	0.196
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	1.00	1.000	1.000
		2	0.95	0.907	0.993
		3	0.74	0.654	0.826
		4	0.56	0.463	0.657
		5	0.21	0.130	0.290
		6	0.06	0.013	0.107
		7	0.0	0.0	0.0
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	80	1	0.99	0.970	1.000
		2	0.97	0.937	1.000
		3	0.84	0.768	0.912
		4	0.68	0.589	0.771
		5	0.43	0.333	0.527
		6	0.24	0.156	0.324
		7	0.04	0.002	0.078
		8	0.07	0.020	0.120
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	0.93	0.880	0.980
		4	0.85	0.780	0.920
		5	0.69	0.599	0.781
		6	0.35	0.257	0.443
		7	0.14	0.072	0.208
		8	0.02	0.0	0.047
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.97	0.937	1.000
		4	0.92	0.867	0.973
		5	0.78	0.699	0.861
		6	0.61	0.514	0.706
		7	0.32	0.229	0.411
		8	0.19	0.113	0.267
		9	0.03	0.0	0.063
		10	0.02	0.0	0.047

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.83	0.816	0.944
		2	0.69	0.599	0.781
		3	0.43	0.333	0.527
		4	0.16	0.088	0.232
		5	0.04	0.002	0.078
		6	0.03	0.0	0.063
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	0.95	0.907	0.993
		2	0.86	0.792	0.928
		3	0.65	0.557	0.743
		4	0.35	0.257	0.443
		5	0.18	0.105	0.255
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	80	1	0.98	0.953	1.000
		2	0.90	0.841	0.959
		3	0.71	0.621	0.799
		4	0.54	0.442	0.638
		5	0.32	0.229	0.411
		6	0.12	0.056	0.184
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	0.91	0.854	0.966
		4	0.67	0.578	0.762
		5	0.45	0.352	0.548
		6	0.21	0.130	0.290
		7	0.08	0.027	0.133
		8	0.04	0.002	0.078
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	100	1	1.00	1.000	1.000
		2	0.98	0.953	1.000
		3	0.97	0.937	1.000
		4	0.84	0.768	0.912
		5	0.65	0.557	0.743
		6	0.42	0.323	0.517
		7	0.14	0.072	0.208
		8	0.06	0.013	0.107
		9	0.01	0.0	0.033
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE DROPS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS R	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	10	1	0.04	0.002	0.078
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.20	0.122	0.278
		2	0.03	0.0	0.063
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.41	0.314	0.506
		2	0.05	0.007	0.093
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.62	0.525	0.715
		2	0.28	0.192	0.368
		3	0.04	0.002	0.078
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.72	0.632	0.808
		2	0.38	0.285	0.475
		3	0.12	0.056	0.184
		4	0.04	0.002	0.078
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, SINGLE BOMBS FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS R	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
110	60	1	0.85	0.780	0.920
		2	0.51	0.412	0.608
		3	0.24	0.156	0.324
		4	0.09	0.034	0.146
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	0.95	0.907	0.993
		2	0.64	0.546	0.734
		3	0.45	0.352	0.548
		4	0.19	0.113	0.267
		5	0.10	0.041	0.159
		6	0.02	0.0	0.047
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	80	1	0.97	0.937	1.000
		2	0.88	0.816	0.944
		3	0.54	0.442	0.638
		4	0.30	0.210	0.390
		5	0.14	0.072	0.208
		6	0.06	0.013	0.107
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	0.90	0.841	0.959
		3	0.79	0.710	0.870
		4	0.53	0.432	0.628
		5	0.31	0.219	0.401
		6	0.12	0.056	0.184
		7	0.04	0.002	0.078
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	100	1	1.00	1.000	1.000
		2	0.95	0.907	0.993
		3	0.88	0.816	0.944
		4	0.74	0.654	0.826
		5	0.38	0.285	0.475
		6	0.21	0.130	0.290
		7	0.10	0.041	0.159
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR SORTIE, SINGLE PROPS FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF X BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.33	0.238	0.422
		2	0.10	0.041	0.159
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.90	0.841	0.959
		2	0.39	0.294	0.486
		3	0.18	0.105	0.255
		4	0.04	0.002	0.078
		5	0.02	0.0	0.047
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.96	0.922	0.998
		2	0.83	0.756	0.904
		3	0.70	0.610	0.790
		4	0.46	0.362	0.558
		5	0.18	0.105	0.255
		6	0.02	0.0	0.047
		7	0.06	0.013	0.107
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	1.00	1.000	1.000
		2	0.98	0.953	1.000
		3	0.95	0.907	0.993
		4	0.84	0.768	0.912
		5	0.63	0.535	0.725
		6	0.36	0.266	0.454
		7	0.20	0.122	0.278
		8	0.04	0.002	0.078
		9	0.02	0.0	0.047
		10	0.02	0.0	0.047
	50	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.99	0.970	1.000
		4	1.00	1.000	1.000
		5	0.88	0.816	0.944
		6	0.81	0.733	0.887
		7	0.56	0.463	0.657
		8	0.23	0.148	0.312
		9	0.07	0.020	0.120
		10	0.03	0.0	0.063

HIT PROBABILITIES FOR 500KNOT, SINGLE DROPS FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.94	0.893	0.987
		7	0.88	0.816	0.944
		8	0.65	0.557	0.743
		9	0.34	0.247	0.433
		10	0.07	0.020	0.120
	70	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	0.96	0.922	0.998
		8	0.91	0.854	0.966
		9	0.65	0.557	0.743
		10	0.31	0.219	0.401
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	0.98	0.953	1.000
		9	0.81	0.733	0.887
		10	0.49	0.392	0.588
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	0.99	0.970	1.000
		9	0.97	0.937	1.000
		10	0.70	0.610	0.790
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	1.00	1.000	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	0.98	0.953	1.000
		10	0.89	0.829	0.951

HIT PROBABILITIES FOR 500KNOT, SINGLE DROPS FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.15	0.080	0.220
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.49	0.392	0.588
		2	0.10	0.041	0.159
		3	0.02	0.0	0.047
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.74	0.654	0.826
		2	0.35	0.257	0.443
		3	0.04	0.002	0.078
		4	0.04	0.002	0.078
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.90	0.841	0.959
		2	0.63	0.535	0.725
		3	0.31	0.219	0.401
		4	0.08	0.027	0.133
		5	0.04	0.002	0.078
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.99	0.970	1.000
		2	0.80	0.722	0.878
		3	0.51	0.412	0.608
		4	0.33	0.238	0.422
		5	0.13	0.064	0.196
		6	0.03	0.0	0.063
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 500KNOT, SINGLE BOMBS FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.99	0.970	1.000
		2	0.94	0.893	0.987
		3	0.79	0.710	0.870
		4	0.56	0.463	0.657
		5	0.41	0.314	0.506
		6	0.17	0.096	0.244
		7	0.07	0.020	0.120
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	0.97	0.937	1.000
		4	0.86	0.792	0.928
		5	0.64	0.546	0.734
		6	0.41	0.314	0.506
		7	0.18	0.105	0.255
		8	0.03	0.0	0.063
		9	0.01	0.0	0.030
		10	0.0	0.0	0.0
	80	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.97	0.937	1.000
		4	0.93	0.953	1.000
		5	0.79	0.710	0.870
		6	0.53	0.483	0.677
		7	0.33	0.238	0.422
		8	0.22	0.139	0.301
		9	0.08	0.0	0.063
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.96	0.922	0.998
		6	0.77	0.688	0.852
		7	0.55	0.452	0.648
		8	0.32	0.229	0.411
		9	0.14	0.072	0.208
		10	0.01	0.0	0.030
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.97	0.937	1.000
		6	0.95	0.907	0.993
		7	0.77	0.688	0.852
		8	0.44	0.343	0.537
		9	0.28	0.192	0.368
		10	0.07	0.020	0.120

HIT PROBABILITIES FOR 500KNOT, SINGLE DROPS FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE B FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN B METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.07	0.020	0.120
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.29	0.201	0.379
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.46	0.362	0.558
		2	0.15	0.080	0.220
		3	0.03	0.0	0.063
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.63	0.535	0.725
		2	0.26	0.174	0.346
		3	0.05	0.007	0.093
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.81	0.733	0.887
		2	0.47	0.372	0.568
		3	0.19	0.113	0.267
		4	0.03	0.0	0.063
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 500KNOT, SINGLE DROPS FROM 20000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE P FROM TARGET	NUMBER OF R BOMBS B	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.90	0.841	0.959
		2	0.63	0.535	0.725
		3	0.42	0.323	0.517
		4	0.12	0.056	0.184
		5	0.03	0.0	0.063
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	0.97	0.937	1.000
		2	0.85	0.780	0.920
		3	0.66	0.567	0.753
		4	0.34	0.247	0.433
		5	0.11	0.049	0.171
		6	0.02	0.0	0.047
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	80	1	0.99	0.970	1.000
		2	0.91	0.854	0.966
		3	0.71	0.621	0.799
		4	0.50	0.402	0.598
		5	0.31	0.219	0.401
		6	0.12	0.056	0.184
		7	0.01	0.0	0.030
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	90	1	1.00	1.000	1.000
		2	0.97	0.937	1.000
		3	0.86	0.792	0.928
		4	0.73	0.643	0.817
		5	0.48	0.382	0.578
		6	0.21	0.130	0.290
		7	0.13	0.064	0.196
		8	0.02	0.0	0.047
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	0.96	0.922	0.998
		4	0.90	0.841	0.959
		5	0.63	0.535	0.725
		6	0.41	0.314	0.506
		7	0.16	0.088	0.232
		8	0.08	0.027	0.133
		9	0.0	0.0	0.0
		10	0.01	0.0	0.030

HIT PROBABILITIES FOR 300KNOT, RIPPLE DROP,
INTERVALOMETER TIME=.10SEC, FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.21	0.130	0.290
		2	0.01	0.0	0.030
		3	0.01	0.0	0.030
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.53	0.432	0.628
		2	0.23	0.148	0.312
		3	0.07	0.020	0.120
		4	0.01	0.0	0.030
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.71	0.621	0.799
		2	0.63	0.535	0.725
		3	0.36	0.266	0.454
		4	0.22	0.139	0.301
		5	0.08	0.027	0.133
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.81	0.733	0.887
		2	0.71	0.621	0.799
		3	0.66	0.567	0.753
		4	0.47	0.372	0.568
		5	0.23	0.148	0.312
		6	0.07	0.020	0.120
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.92	0.867	0.973
		2	0.91	0.854	0.966
		3	0.81	0.733	0.887
		4	0.76	0.676	0.844
		5	0.64	0.546	0.734
		6	0.36	0.266	0.454
		7	0.10	0.041	0.159
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, RIPPLE DROP,
INTERVALOMETER TIME=.10SEC, FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	60	1	0.95	0.907	0.993
		2	0.90	0.841	0.959
		3	0.86	0.792	0.928
		4	0.89	0.829	0.951
		5	0.81	0.733	0.887
		6	0.60	0.504	0.696
		7	0.38	0.285	0.475
		8	0.16	0.088	0.232
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	70	1	0.99	0.970	1.000
		2	0.97	0.937	1.000
		3	0.98	0.953	1.000
		4	0.97	0.937	1.000
		5	0.88	0.816	0.944
		6	0.84	0.768	0.912
		7	0.52	0.422	0.618
		8	0.43	0.333	0.527
		9	0.14	0.072	0.208
		10	0.02	0.0	0.047
	80	1	0.99	0.970	1.000
		2	0.99	0.970	1.000
		3	1.00	1.000	1.000
		4	0.97	0.937	1.000
		5	0.91	0.854	0.966
		6	0.92	0.867	0.973
		7	0.80	0.722	0.878
		8	0.63	0.535	0.725
		9	0.42	0.323	0.517
		10	0.16	0.088	0.232
	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	0.99	0.970	1.000
		5	0.97	0.937	1.000
		6	0.97	0.937	1.000
		7	0.85	0.780	0.920
		8	0.77	0.688	0.852
		9	0.56	0.463	0.657
		10	0.20	0.122	0.278
	100	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	0.99	0.970	1.000
		6	0.98	0.953	1.000
		7	0.95	0.907	0.993
		8	0.86	0.792	0.928
		9	0.75	0.665	0.835
		10	0.45	0.352	0.548

HIT PROBABILITIES FOR 300KNOT, RIPPLE DROP,
INTERVALOMETER TIME=.10SEC, FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.10	0.041	0.159
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.35	0.257	0.443
		2	0.13	0.064	0.196
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.35	0.257	0.443
		2	0.31	0.219	0.401
		3	0.16	0.088	0.232
		4	0.03	0.0	0.063
		5	0.01	0.0	0.030
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.54	0.442	0.638
		2	0.45	0.352	0.548
		3	0.28	0.192	0.368
		4	0.22	0.139	0.301
		5	0.12	0.056	0.184
		6	0.04	0.002	0.078
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.70	0.610	0.790
		2	0.46	0.362	0.558
		3	0.39	0.294	0.486
		4	0.37	0.275	0.465
		5	0.26	0.174	0.346
		6	0.15	0.080	0.220
		7	0.04	0.002	0.078
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, RIPPLE DROP,
INTERVALOMETER TIME=.10SEC, FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	60	1	0.74	0.654	0.826
		2	0.63	0.535	0.725
		3	0.62	0.525	0.715
		4	0.49	0.392	0.588
		5	0.35	0.257	0.443
		6	0.33	0.238	0.422
		7	0.17	0.096	0.244
		8	0.10	0.041	0.159
		9	0.02	0.0	0.047
		10	0.0	0.0	0.0
	70	1	0.82	0.745	0.895
		2	0.77	0.688	0.852
		3	0.69	0.599	0.781
		4	0.64	0.546	0.734
		5	0.47	0.372	0.568
		6	0.42	0.323	0.517
		7	0.17	0.096	0.244
		8	0.15	0.080	0.220
		9	0.06	0.013	0.107
		10	0.02	0.0	0.047
	80	1	0.87	0.804	0.936
		2	0.77	0.688	0.852
		3	0.70	0.610	0.790
		4	0.55	0.452	0.648
		5	0.59	0.494	0.686
		6	0.51	0.412	0.608
		7	0.42	0.323	0.517
		8	0.29	0.201	0.379
		9	0.12	0.056	0.184
		10	0.09	0.034	0.146
	90	1	0.89	0.829	0.951
		2	0.86	0.792	0.928
		3	0.86	0.792	0.928
		4	0.74	0.654	0.826
		5	0.63	0.535	0.725
		6	0.70	0.610	0.790
		7	0.51	0.412	0.608
		8	0.42	0.323	0.517
		9	0.33	0.238	0.422
		10	0.11	0.049	0.171
	100	1	0.89	0.829	0.951
		2	0.92	0.867	0.973
		3	0.86	0.792	0.928
		4	0.80	0.722	0.878
		5	0.81	0.733	0.887
		6	0.71	0.621	0.799
		7	0.57	0.473	0.667
		8	0.49	0.392	0.588
		9	0.29	0.201	0.379
		10	0.22	0.139	0.301

HIT PROBABILITIES FOR 300KNOT, RIPPLE DROP,
INTERVALOMETER TIME=.10SEC, FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.02	0.0	0.047
		2	0.0	0.0	0.0
		3	0.0	0.0	0.0
		4	0.0	0.0	0.0
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	20	1	0.16	0.088	0.232
		2	0.08	0.027	0.133
		3	0.01	0.0	0.030
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	30	1	0.26	0.174	0.346
		2	0.14	0.072	0.208
		3	0.08	0.027	0.133
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	40	1	0.32	0.229	0.411
		2	0.24	0.156	0.324
		3	0.25	0.165	0.335
		4	0.14	0.072	0.208
		5	0.07	0.020	0.120
		6	0.0	0.0	0.0
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	50	1	0.36	0.266	0.454
		2	0.38	0.285	0.475
		3	0.27	0.183	0.357
		4	0.13	0.064	0.196
		5	0.17	0.096	0.244
		6	0.08	0.027	0.133
		7	0.02	0.0	0.047
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, RIPPLE DROP,
INTERVALOMETER TIME=.10SEC, FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R BOMBS WITHIN B METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	60	1	0.52	0.422	0.618
		2	0.39	0.294	0.486
		3	0.26	0.174	0.346
		4	0.29	0.201	0.379
		5	0.17	0.096	0.244
		6	0.21	0.130	0.290
		7	0.05	0.007	0.093
		8	0.01	0.0	0.030
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	70	1	0.54	0.442	0.638
		2	0.43	0.333	0.527
		3	0.49	0.392	0.588
		4	0.30	0.210	0.390
		5	0.28	0.192	0.368
		6	0.22	0.139	0.301
		7	0.12	0.056	0.184
		8	0.08	0.027	0.133
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
	80	1	0.53	0.432	0.628
		2	0.54	0.442	0.638
		3	0.49	0.392	0.588
		4	0.43	0.333	0.527
		5	0.34	0.247	0.433
		6	0.37	0.275	0.465
		7	0.23	0.148	0.312
		8	0.15	0.080	0.220
		9	0.08	0.027	0.133
		10	0.02	0.0	0.047
	90	1	0.72	0.632	0.808
		2	0.70	0.610	0.790
		3	0.56	0.463	0.657
		4	0.46	0.362	0.558
		5	0.52	0.422	0.618
		6	0.33	0.285	0.475
		7	0.30	0.210	0.390
		8	0.19	0.113	0.267
		9	0.13	0.064	0.196
		10	0.07	0.020	0.120
	100	1	0.78	0.699	0.861
		2	0.59	0.494	0.686
		3	0.69	0.599	0.781
		4	0.51	0.412	0.608
		5	0.61	0.514	0.706
		6	0.47	0.372	0.568
		7	0.37	0.275	0.465
		8	0.31	0.219	0.401
		9	0.22	0.139	0.301
		10	0.15	0.080	0.220

HIT PROBABILITIES FOR BOOKLET, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN B METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	10	1	0.31	0.219	0.401
		2	0.24	0.156	0.324
		3	0.11	0.049	0.171
		4	0.05	0.007	0.093
		5	0.05	0.007	0.093
		6	0.03	0.0	0.063
		7	0.04	0.002	0.078
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
		11	0.0	0.0	0.0
		12	0.0	0.0	0.0
		13	0.0	0.0	0.0
		14	0.0	0.0	0.0
		15	0.0	0.0	0.0
		16	0.0	0.0	0.0
		17	0.0	0.0	0.0
		18	0.0	0.0	0.0
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0
	20	1	0.56	0.463	0.657
		2	0.53	0.432	0.628
		3	0.46	0.362	0.558
		4	0.32	0.229	0.411
		5	0.39	0.294	0.486
		6	0.35	0.257	0.443
		7	0.23	0.148	0.312
		8	0.20	0.122	0.278
		9	0.17	0.096	0.244
		10	0.05	0.007	0.093
		11	0.03	0.027	0.133
		12	0.02	0.0	0.047
		13	0.02	0.0	0.047
		14	0.04	0.002	0.078
		15	0.02	0.0	0.047
		16	0.02	0.0	0.047
		17	0.0	0.0	0.0
		18	0.0	0.0	0.0
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS R	PROBABILITY OF R BOMBS WITHIN CEP METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	30	1	0.70	0.610	0.790
		2	0.64	0.546	0.734
		3	0.59	0.494	0.686
		4	0.63	0.535	0.725
		5	0.57	0.473	0.667
		6	0.48	0.382	0.578
		7	0.42	0.323	0.517
		8	0.38	0.285	0.475
		9	0.32	0.229	0.411
		10	0.29	0.201	0.379
		11	0.28	0.192	0.368
		12	0.30	0.210	0.390
		13	0.16	0.088	0.232
		14	0.23	0.148	0.312
		15	0.13	0.064	0.196
		16	0.13	0.064	0.196
		17	0.12	0.056	0.184
		18	0.06	0.013	0.107
		19	0.05	0.007	0.093
		20	0.01	0.0	0.030
	40	1	0.83	0.756	0.904
		2	0.77	0.688	0.852
		3	0.80	0.722	0.878
		4	0.76	0.676	0.844
		5	0.59	0.494	0.686
		6	0.72	0.632	0.808
		7	0.52	0.422	0.618
		8	0.64	0.546	0.734
		9	0.60	0.504	0.696
		10	0.49	0.392	0.588
		11	0.51	0.412	0.608
		12	0.48	0.382	0.578
		13	0.50	0.402	0.598
		14	0.43	0.333	0.527
		15	0.31	0.219	0.401
		16	0.34	0.247	0.433
		17	0.32	0.229	0.411
		18	0.25	0.165	0.335
		19	0.17	0.096	0.244
		20	0.11	0.049	0.171

HIT PROBABILITIES FOR BOOKLET, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	50	1	0.94	0.893	0.987
		2	0.92	0.867	0.973
		3	0.81	0.733	0.887
		4	0.84	0.768	0.912
		5	0.86	0.792	0.928
		6	0.83	0.756	0.904
		7	0.70	0.610	0.790
		8	0.78	0.699	0.861
		9	0.69	0.599	0.781
		10	0.74	0.654	0.826
		11	0.67	0.578	0.762
		12	0.65	0.557	0.743
		13	0.59	0.494	0.686
		14	0.70	0.610	0.790
		15	0.56	0.463	0.657
		16	0.57	0.473	0.667
		17	0.52	0.422	0.618
		18	0.38	0.285	0.475
		19	0.42	0.323	0.517
		20	0.22	0.139	0.301
	60	1	0.97	0.937	1.000
		2	0.95	0.907	0.993
		3	0.94	0.893	0.987
		4	0.89	0.829	0.951
		5	0.91	0.854	0.966
		6	0.89	0.829	0.951
		7	0.87	0.804	0.936
		8	0.90	0.841	0.959
		9	0.84	0.768	0.912
		10	0.81	0.733	0.887
		11	0.87	0.804	0.936
		12	0.77	0.688	0.852
		13	0.80	0.722	0.878
		14	0.78	0.699	0.861
		15	0.73	0.643	0.817
		16	0.70	0.610	0.790
		17	0.68	0.589	0.771
		18	0.56	0.463	0.657
		19	0.58	0.483	0.677
		20	0.40	0.304	0.496

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS	PROBABILITY OF 3 BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	70	1	0.99	0.970	1.000
		2	0.96	0.922	0.998
		3	0.99	0.970	1.000
		4	0.99	0.970	1.000
		5	0.97	0.937	1.000
		6	0.95	0.907	0.993
		7	0.91	0.854	0.966
		8	0.94	0.893	0.987
		9	0.93	0.880	0.980
		10	0.84	0.768	0.912
		11	0.95	0.907	0.993
		12	0.92	0.867	0.973
		13	0.91	0.854	0.966
		14	0.88	0.816	0.944
		15	0.87	0.804	0.936
		16	0.78	0.699	0.861
		17	0.76	0.676	0.844
		18	0.80	0.722	0.878
		19	0.66	0.567	0.753
		20	0.63	0.589	0.771
	80	1	0.99	0.970	1.000
		2	0.97	0.937	1.000
		3	1.00	1.000	1.000
		4	0.98	0.953	1.000
		5	0.97	0.937	1.000
		6	0.99	0.970	1.000
		7	0.99	0.970	1.000
		8	1.00	1.000	1.000
		9	0.98	0.953	1.000
		10	0.95	0.907	0.993
		11	0.94	0.893	0.987
		12	0.97	0.937	1.000
		13	0.94	0.893	0.987
		14	0.95	0.907	0.993
		15	0.94	0.893	0.987
		16	0.96	0.922	0.998
		17	0.89	0.829	0.951
		18	0.86	0.792	0.928
		19	0.79	0.710	0.870
		20	0.74	0.654	0.826

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE FROM TARGET	NUMBER OF BOMBS R	PROBABILITY OF 8 BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
40	90	1	1.00	1.000	1.000
		2	1.00	1.000	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	1.00	1.000	1.000
		8	0.99	0.970	1.000
		9	0.97	0.937	1.000
		10	0.98	0.953	1.000
		11	0.99	0.970	1.000
		12	0.99	0.970	1.000
		13	0.97	0.937	1.000
		14	0.95	0.907	0.993
		15	0.96	0.922	0.995
		16	0.92	0.867	0.973
		17	0.98	0.953	1.000
		18	0.92	0.867	0.973
		19	0.95	0.907	0.993
		20	0.85	0.780	0.920
	100	1	1.00	1.000	1.000
		2	0.99	0.970	1.000
		3	1.00	1.000	1.000
		4	1.00	1.000	1.000
		5	1.00	1.000	1.000
		6	0.99	0.970	1.000
		7	1.00	1.000	1.000
		8	1.00	1.000	1.000
		9	1.00	1.000	1.000
		10	0.99	0.970	1.000
		11	1.00	1.000	1.000
		12	0.99	0.970	1.000
		13	1.00	1.000	1.000
		14	0.95	0.907	0.993
		15	0.98	0.953	1.000
		16	0.99	0.970	1.000
		17	0.96	0.922	0.998
		18	0.94	0.893	0.987
		19	0.97	0.937	1.000
		20	0.90	0.841	0.959

HIT PROBABILITIES F P 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATIO & ERROR 0 METERS

CEP	RANGE P FROM TARGET	NUMBER OF BOMBS H	PROBABILITY OF P BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	10	1	0.07	0.020	0.120
		2	0.04	0.002	0.078
		3	0.05	0.007	0.093
		4	0.03	0.0	0.063
		5	0.01	0.0	0.030
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
		11	0.0	0.0	0.0
		12	0.0	0.0	0.0
		13	0.0	0.0	0.0
		14	0.0	0.0	0.0
		15	0.0	0.0	0.0
		16	0.0	0.0	0.0
		17	0.0	0.0	0.0
		18	0.0	0.0	0.0
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0
	20	1	0.19	0.113	0.267
		2	0.16	0.088	0.232
		3	0.11	0.049	0.171
		4	0.09	0.034	0.146
		5	0.08	0.027	0.133
		6	0.12	0.056	0.184
		7	0.09	0.034	0.146
		8	0.03	0.0	0.063
		9	0.04	0.002	0.078
		10	0.0	0.0	0.0
		11	0.03	0.0	0.063
		12	0.01	0.0	0.030
		13	0.0	0.0	0.0
		14	0.0	0.0	0.0
		15	0.0	0.0	0.0
		16	0.0	0.0	0.0
		17	0.0	0.0	0.0
		18	0.0	0.0	0.0
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0

MIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE B FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN B METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	30	1	0.35	0.257	0.443
		2	0.35	0.257	0.443
		3	0.25	0.165	0.335
		4	0.19	0.113	0.267
		5	0.27	0.183	0.357
		6	0.22	0.139	0.301
		7	0.21	0.130	0.290
		8	0.14	0.072	0.208
		9	0.14	0.072	0.208
		10	0.11	0.049	0.171
		11	0.08	0.027	0.133
		12	0.10	0.041	0.159
		13	0.04	0.002	0.078
		14	0.05	0.007	0.093
		15	0.03	0.0	0.063
		16	0.05	0.007	0.093
		17	0.03	0.0	0.063
		18	0.03	0.0	0.063
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0
	40	1	0.49	0.392	0.588
		2	0.32	0.229	0.411
		3	0.44	0.343	0.537
		4	0.26	0.174	0.346
		5	0.30	0.210	0.390
		6	0.27	0.183	0.357
		7	0.24	0.156	0.324
		8	0.26	0.174	0.346
		9	0.29	0.201	0.379
		10	0.18	0.105	0.255
		11	0.16	0.088	0.232
		12	0.13	0.064	0.196
		13	0.18	0.105	0.255
		14	0.15	0.080	0.220
		15	0.09	0.034	0.146
		16	0.14	0.072	0.208
		17	0.07	0.020	0.120
		18	0.06	0.013	0.107
		19	0.06	0.013	0.107
		20	0.01	0.0	0.030

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	50	1	0.54	0.442	0.638
		2	0.55	0.452	0.648
		3	0.46	0.362	0.558
		4	0.40	0.304	0.496
		5	0.50	0.402	0.598
		6	0.37	0.275	0.465
		7	0.32	0.229	0.411
		8	0.34	0.247	0.433
		9	0.27	0.183	0.357
		10	0.34	0.247	0.433
		11	0.34	0.247	0.433
		12	0.27	0.183	0.357
		13	0.28	0.192	0.368
		14	0.19	0.113	0.267
		15	0.29	0.201	0.379
		16	0.24	0.156	0.324
		17	0.16	0.088	0.232
		18	0.13	0.064	0.196
		19	0.11	0.049	0.171
		20	0.14	0.072	0.208
	60	1	0.55	0.452	0.648
		2	0.54	0.442	0.638
		3	0.57	0.473	0.667
		4	0.54	0.442	0.638
		5	0.63	0.535	0.725
		6	0.44	0.343	0.537
		7	0.43	0.333	0.527
		8	0.45	0.352	0.548
		9	0.47	0.372	0.568
		10	0.43	0.333	0.527
		11	0.39	0.294	0.486
		12	0.40	0.304	0.496
		13	0.41	0.314	0.506
		14	0.33	0.233	0.422
		15	0.29	0.201	0.379
		16	0.28	0.192	0.368
		17	0.25	0.165	0.335
		18	0.20	0.122	0.278
		19	0.21	0.130	0.290
		20	0.17	0.096	0.244

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	70	1	0.75	0.665	0.835
		2	0.65	0.557	0.743
		3	0.66	0.567	0.753
		4	0.62	0.525	0.715
		5	0.54	0.442	0.638
		6	0.57	0.473	0.667
		7	0.51	0.412	0.608
		8	0.55	0.452	0.648
		9	0.55	0.452	0.648
		10	0.51	0.412	0.608
		11	0.52	0.422	0.618
		12	0.44	0.343	0.537
		13	0.47	0.372	0.568
		14	0.51	0.412	0.608
		15	0.42	0.323	0.517
		16	0.49	0.392	0.588
		17	0.38	0.285	0.475
		18	0.37	0.275	0.465
		19	0.34	0.247	0.433
		20	0.26	0.174	0.346
	80	1	0.80	0.722	0.878
		2	0.78	0.699	0.861
		3	0.77	0.688	0.852
		4	0.73	0.643	0.817
		5	0.68	0.589	0.771
		6	0.57	0.473	0.667
		7	0.63	0.535	0.725
		8	0.71	0.621	0.799
		9	0.60	0.504	0.696
		10	0.54	0.442	0.638
		11	0.62	0.525	0.715
		12	0.54	0.442	0.638
		13	0.64	0.546	0.734
		14	0.53	0.432	0.628
		15	0.50	0.402	0.598
		16	0.47	0.372	0.568
		17	0.38	0.285	0.475
		18	0.48	0.382	0.578
		19	0.44	0.343	0.537
		20	0.26	0.174	0.346

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
70	90	1	0.88	0.816	0.944
		2	0.82	0.745	0.895
		3	0.83	0.756	0.904
		4	0.79	0.710	0.870
		5	0.76	0.676	0.844
		6	0.73	0.643	0.817
		7	0.72	0.632	0.808
		8	0.70	0.610	0.790
		9	0.68	0.589	0.771
		10	0.63	0.535	0.725
		11	0.69	0.599	0.781
		12	0.69	0.599	0.781
		13	0.63	0.535	0.725
		14	0.71	0.621	0.799
		15	0.64	0.546	0.734
		16	0.53	0.432	0.628
		17	0.58	0.483	0.677
		18	0.58	0.483	0.677
		19	0.58	0.483	0.677
		20	0.51	0.412	0.608
	100	1	0.89	0.829	0.951
		2	0.89	0.829	0.951
		3	0.87	0.804	0.936
		4	0.90	0.841	0.959
		5	0.86	0.792	0.928
		6	0.84	0.768	0.912
		7	0.79	0.710	0.870
		8	0.81	0.733	0.887
		9	0.84	0.768	0.912
		10	0.78	0.699	0.861
		11	0.72	0.632	0.808
		12	0.69	0.599	0.781
		13	0.78	0.699	0.861
		14	0.71	0.621	0.799
		15	0.70	0.610	0.790
		16	0.66	0.567	0.753
		17	0.54	0.442	0.638
		18	0.66	0.567	0.753
		19	0.59	0.494	0.686
		20	0.53	0.432	0.628

HIT PROBABILITIES FOR BOOKMOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS R	PROBABILITY OF R BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	10	1	0.07	0.020	0.120
		2	0.01	0.0	0.030
		3	0.0	0.0	0.0
		4	0.02	0.0	0.047
		5	0.0	0.0	0.0
		6	0.01	0.0	0.030
		7	0.0	0.0	0.0
		8	0.0	0.0	0.0
		9	0.0	0.0	0.0
		10	0.0	0.0	0.0
		11	0.0	0.0	0.0
		12	0.0	0.0	0.0
		13	0.0	0.0	0.0
		14	0.0	0.0	0.0
		15	0.0	0.0	0.0
		16	0.0	0.0	0.0
		17	0.0	0.0	0.0
		18	0.0	0.0	0.0
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0
	20	1	0.12	0.056	0.184
		2	0.12	0.056	0.184
		3	0.12	0.056	0.184
		4	0.07	0.020	0.120
		5	0.04	0.002	0.078
		6	0.05	0.007	0.093
		7	0.04	0.002	0.078
		8	0.01	0.0	0.030
		9	0.05	0.007	0.093
		10	0.0	0.0	0.0
		11	0.01	0.0	0.030
		12	0.0	0.0	0.0
		13	0.0	0.0	0.0
		14	0.0	0.0	0.0
		15	0.0	0.0	0.0
		16	0.0	0.0	0.0
		17	0.0	0.0	0.0
		18	0.0	0.0	0.0
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	30	1	0.16	0.088	0.232
		2	0.15	0.080	0.220
		3	0.16	0.088	0.232
		4	0.07	0.020	0.120
		5	0.17	0.096	0.244
		6	0.06	0.013	0.107
		7	0.07	0.020	0.120
		8	0.08	0.027	0.133
		9	0.06	0.013	0.107
		10	0.05	0.007	0.093
		11	0.02	0.0	0.047
		12	0.06	0.013	0.107
		13	0.02	0.0	0.047
		14	0.02	0.0	0.047
		15	0.01	0.0	0.030
		16	0.02	0.0	0.047
		17	0.0	0.0	0.0
		18	0.02	0.0	0.047
		19	0.0	0.0	0.0
		20	0.0	0.0	0.0
	40	1	0.28	0.192	0.368
		2	0.18	0.105	0.255
		3	0.20	0.122	0.278
		4	0.18	0.105	0.255
		5	0.13	0.064	0.196
		6	0.15	0.080	0.220
		7	0.12	0.056	0.184
		8	0.10	0.041	0.159
		9	0.07	0.020	0.120
		10	0.09	0.034	0.146
		11	0.12	0.056	0.184
		12	0.04	0.002	0.078
		13	0.07	0.020	0.120
		14	0.04	0.002	0.078
		15	0.06	0.013	0.107
		16	0.06	0.013	0.107
		17	0.06	0.013	0.107
		18	0.03	0.0	0.063
		19	0.01	0.0	0.030
		20	0.0	0.0	0.0

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R ERROR TARGET	NUMBER OF BOMBS P	PROBABILITY OF 3 BOMBS WITHIN P METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	50	1	0.32	0.229	0.411
		2	0.32	0.229	0.411
		3	0.25	0.165	0.335
		4	0.17	0.096	0.244
		5	0.23	0.152	0.368
		6	0.17	0.096	0.244
		7	0.24	0.156	0.324
		8	0.10	0.041	0.159
		9	0.18	0.105	0.255
		10	0.15	0.080	0.220
		11	0.09	0.034	0.146
		12	0.13	0.064	0.196
		13	0.14	0.072	0.208
		14	0.05	0.007	0.093
		15	0.06	0.013	0.107
		16	0.12	0.056	0.184
		17	0.15	0.080	0.220
		18	0.05	0.007	0.093
		19	0.03	0.0	0.063
		20	0.01	0.0	0.030
	60	1	0.34	0.247	0.433
		2	0.37	0.275	0.465
		3	0.28	0.192	0.368
		4	0.18	0.105	0.255
		5	0.29	0.201	0.379
		6	0.28	0.192	0.368
		7	0.31	0.219	0.401
		8	0.28	0.192	0.368
		9	0.21	0.130	0.290
		10	0.23	0.148	0.312
		11	0.19	0.113	0.267
		12	0.25	0.165	0.335
		13	0.15	0.080	0.220
		14	0.18	0.105	0.255
		15	0.22	0.139	0.301
		16	0.17	0.096	0.244
		17	0.08	0.027	0.133
		18	0.17	0.096	0.244
		19	0.09	0.034	0.146
		20	0.05	0.007	0.093

HIT PROBABILITIES FOR BOOKNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS R	PROBABILITY OF R BOMBS WITHIN D METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	70	1	0.50	0.402	0.598
		2	0.43	0.333	0.527
		3	0.35	0.257	0.443
		4	0.48	0.382	0.578
		5	0.42	0.323	0.517
		6	0.36	0.266	0.454
		7	0.35	0.257	0.443
		8	0.36	0.266	0.454
		9	0.32	0.229	0.411
		10	0.34	0.247	0.433
		11	0.26	0.174	0.346
		12	0.20	0.122	0.278
		13	0.24	0.156	0.324
		14	0.31	0.219	0.401
		15	0.29	0.201	0.379
		16	0.15	0.080	0.220
		17	0.19	0.113	0.267
		18	0.16	0.088	0.232
		19	0.17	0.096	0.244
		20	0.07	0.020	0.120
	80	1	0.59	0.494	0.686
		2	0.57	0.473	0.667
		3	0.44	0.343	0.537
		4	0.41	0.314	0.506
		5	0.47	0.372	0.568
		6	0.39	0.294	0.486
		7	0.40	0.304	0.496
		8	0.34	0.247	0.433
		9	0.37	0.275	0.465
		10	0.31	0.219	0.401
		11	0.40	0.304	0.496
		12	0.31	0.219	0.401
		13	0.34	0.247	0.433
		14	0.32	0.229	0.411
		15	0.27	0.183	0.357
		16	0.40	0.304	0.496
		17	0.20	0.122	0.278
		18	0.27	0.183	0.357
		19	0.18	0.105	0.255
		20	0.12	0.056	0.184

HIT PROBABILITIES FOR 300KNOT, CLUSTER DROP FROM 10000 FEET.
TARGET LOCATION ERROR 0 METERS

CEP	RANGE R FROM TARGET	NUMBER OF BOMBS B	PROBABILITY OF B BOMBS WITHIN R METERS OF TGT	95% CONFIDENCE LIMITS ON PROBABILITY LOWER	UPPER
100	90	1	0.54	0.442	0.638
		2	0.51	0.412	0.608
		3	0.56	0.463	0.657
		4	0.53	0.432	0.628
		5	0.55	0.452	0.648
		6	0.50	0.402	0.598
		7	0.44	0.343	0.537
		8	0.41	0.314	0.506
		9	0.49	0.392	0.588
		10	0.39	0.294	0.486
		11	0.44	0.343	0.537
		12	0.43	0.333	0.527
		13	0.44	0.343	0.537
		14	0.39	0.294	0.486
		15	0.33	0.238	0.422
		16	0.38	0.285	0.475
		17	0.29	0.201	0.379
		18	0.33	0.238	0.422
		19	0.25	0.165	0.335
		20	0.27	0.183	0.357
	100	1	0.62	0.525	0.715
		2	0.74	0.654	0.826
		3	0.65	0.567	0.753
		4	0.58	0.483	0.677
		5	0.62	0.525	0.715
		6	0.48	0.382	0.578
		7	0.65	0.557	0.743
		8	0.60	0.504	0.696
		9	0.51	0.412	0.608
		10	0.61	0.514	0.706
		11	0.42	0.323	0.517
		12	0.48	0.382	0.578
		13	0.43	0.333	0.527
		14	0.49	0.392	0.588
		15	0.44	0.343	0.537
		16	0.40	0.304	0.496
		17	0.42	0.323	0.517
		18	0.33	0.238	0.422
		19	0.27	0.183	0.357
		20	0.29	0.201	0.379

APPENDIX D

COMPUTER OUTPUT OF RESULTS OF TPQ/MAF MODEL SIMULATION

TPQ TYPE = 1
NO. OF SITES= 3
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	42	50	312	614
2	41	50	300	614
3	40	50	291	614
4	41	50	299	614
5	43	50	293	614
6	45	50	324	614
7	41	50	293	614
8	46	50	326	614
9	46	50	302	614
10	41	50	313	614
11	42	50	291	614
12	43	50	320	614
13	40	50	307	614
14	43	50	271	614
15	39	50	296	614
16	40	50	307	614
17	45	50	319	614
18	38	50	301	614
19	42	50	312	614
20	42	50	317	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 42.
STD. DEV.= 2.2

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 305.
STD. DEV.= 13.6

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TRQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	43	50	330	614
2	45	50	329	614
3	44	50	316	614
4	41	50	322	614
5	42	50	317	614
6	48	50	344	614
7	44	50	311	614
8	48	50	343	614
9	46	50	322	614
10	46	50	340	614
11	42	50	312	614
12	45	50	343	614
13	43	50	321	614
14	45	50	297	614
15	43	50	326	614
16	43	50	331	614
17	45	50	340	614
18	44	50	326	614
19	44	50	332	614
20	45	50	327	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 44.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 326.
STD. DEV.= 12.3

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

```
 =              2
,ITES=          2
'IX=            1
ATIONS            X         Y
  SITE1           0.        5.
  SITE2          35.       35.
```

TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
42	50	316	614
42	50	306	614
41	50	288	614
42	50	305	614
41	50	300	614
47	50	320	614
44	50	285	614
45	50	317	614
43	50	291	614
45	50	318	614
41	50	301	614
44	50	313	614
42	50	299	614
43	50	280	614
41	50	289	614
40	50	304	614
46	50	326	614
41	50	303	614
42	50	313	614
46	50	309	614

```
RIALS=                                  20

0 TGTS HIT=                             43.
0 DEV.=                                 2.0

T ATTEMPTED(PER TRIAL)=                 50

0 BOMBS ON TGT=                         304.
    STD. DEV.=                          12.7

N. BOMBS DROPPED(PER TRIAL)=            614
```

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 1
SITE LOCATIONS X Y
SITE1 35. 35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	39	50	266	614
2	35	50	261	614
3	36	50	235	614
4	37	50	266	614
5	38	50	265	614
6	42	50	270	614
7	35	50	232	614
8	40	50	265	614
9	38	50	266	614
10	40	50	282	614
11	38	50	276	614
12	44	50	280	614
13	37	50	254	614
14	34	50	243	614
15	39	50	278	614
16	36	50	272	614
17	37	50	281	614
18	37	50	259	614
19	41	50	267	614
20	43	50	264	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 38.
STD. DEV.= 2.7

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 264.
STD. DEV.= 14.1

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 1
NO. OF SITES= 3
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	39	50	179	614
2	37	50	169	614
3	39	50	158	614
4	41	50	168	614
5	40	50	168	614
6	44	50	187	614
7	38	50	161	614
8	44	50	198	614
9	45	50	161	614
10	36	50	162	614
11	36	50	153	614
12	42	50	182	614
13	39	50	181	614
14	39	50	139	614
15	33	50	166	614
16	36	50	176	614
17	43	50	177	614
18	36	50	188	614
19	39	50	172	614
20	42	50	191	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 39.
STD. DEV.= 3.2

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 172.
STD. DEV.= 14.2

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	42	50	198	614
2	41	50	180	614
3	43	50	183	614
4	41	50	194	614
5	41	50	183	614
6	46	50	195	614
7	42	50	181	614
8	46	50	214	614
9	45	50	178	614
10	45	50	194	614
11	38	50	173	614
12	44	50	208	614
13	42	50	205	614
14	44	50	170	614
15	40	50	187	614
16	39	50	195	614
17	43	50	204	614
18	41	50	209	614
19	44	50	198	614
20	45	50	210	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 43.
STD. DEV.= 2.3

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 193.
STD. DEV.= 13.1

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPO TYPE = 2
NO. OF SITES= 2
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	42	50	185	614
2	38	50	175	614
3	41	50	176	614
4	38	50	166	614
5	39	50	176	614
6	45	50	186	614
7	39	50	158	614
8	43	50	185	614
9	40	50	159	614
10	43	50	193	614
11	38	50	165	614
12	41	50	206	614
13	42	50	179	614
14	37	50	144	614
15	37	50	173	614
16	35	50	171	614
17	45	50	200	614
18	37	50	187	614
19	40	50	180	614
20	43	50	197	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 40.
STD. DEV.= 2.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 178.
STD. DEV.= 15.3

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	-35.	35.
SITE2	35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	42	50	197	614
2	37	50	177	614
3	39	50	180	614
4	39	50	187	614
5	41	50	179	614
6	45	50	194	614
7	42	50	181	614
8	44	50	212	614
9	44	50	174	614
10	41	50	186	614
11	39	50	171	614
12	42	50	201	614
13	40	50	189	614
14	39	50	162	614
15	38	50	178	614
16	37	50	194	614
17	43	50	194	614
18	38	50	200	614
19	42	50	192	614
20	44	50	202	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 41.
STD. DEV.= 2.5

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 188.
STD. DEV.= 12.3

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 2
SITE LOCATIONS X Y
SITE1 0. 5.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	37	50	139	614
2	36	50	134	614
3	39	50	126	614
4	29	50	126	614
5	35	50	143	614
6	44	50	148	614
7	33	50	110	614
8	37	50	144	614
9	35	50	119	614
10	39	50	145	614
11	32	50	110	614
12	38	50	146	614
13	36	50	131	614
14	34	50	107	614
15	34	50	133	614
16	31	50	121	614
17	39	50	160	614
18	35	50	129	614
19	33	50	142	614
20	39	50	151	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 36.
STD. DEV.= 3.4

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 133.
STD. DEV.= 14.7

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 2
SITE LOCATIONS

	X	Y
SITE1	35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	38	50	137	614
2	32	50	136	614
3	32	50	136	614
4	31	50	141	614
5	34	50	155	614
6	40	50	169	614
7	31	50	127	614
8	37	50	147	614
9	35	50	139	614
10	36	50	151	614
11	34	50	133	614
12	39	50	165	614
13	31	50	142	614
14	31	50	115	614
15	34	50	148	614
16	33	50	164	614
17	36	50	155	614
18	33	50	147	614
19	37	50	148	614
20	38	50	155	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 35.
STD. DEV.= 2.9

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 146.
STD. DEV.= 13.3

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 1
NO. OF SITES= 3
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	408	614
2	45	50	405	614
3	42	50	386	614
4	44	50	386	614
5	44	50	382	614
6	45	50	426	614
7	45	50	389	614
8	47	50	430	614
9	49	50	407	614
10	45	50	395	614
11	44	50	393	614
12	46	50	414	614
13	45	50	397	614
14	45	50	372	614
15	42	50	399	614
16	45	50	412	614
17	47	50	422	614
18	41	50	395	614
19	45	50	402	614
20	48	50	416	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 45.
STD. DEV.= 1.9

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 402.
STD. DEV.= 15.3

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	424	614
2	48	50	436	614
3	46	50	413	614
4	43	50	407	614
5	43	50	404	614
6	48	50	439	614
7	45	50	416	614
8	48	50	437	614
9	48	50	423	614
10	48	50	424	614
11	44	50	419	614
12	48	50	432	614
13	45	50	419	614
14	46	50	389	614
15	45	50	425	614
16	45	50	432	614
17	46	50	440	614
18	45	50	405	614
19	45	50	422	614
20	49	50	423	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 46.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 421.
STD. DEV.= 13.2

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	388	614
2	45	50	391	614
3	45	50	367	614
4	44	50	392	614
5	44	50	385	614
6	49	50	422	614
7	46	50	397	614
8	47	50	416	614
9	48	50	383	614
10	47	50	419	614
11	43	50	401	614
12	48	50	402	614
13	44	50	396	614
14	45	50	384	614
15	45	50	382	614
16	43	50	405	614
17	46	50	420	614
18	44	50	383	614
19	44	50	398	614
20	48	50	400	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 45.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 397.
STD. DEV.= 14.7

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	328	614
2	43	50	315	614
3	43	50	323	614
4	43	50	324	614
5	45	50	336	614
6	49	50	355	614
7	44	50	314	614
8	47	50	353	614
9	49	50	321	614
10	48	50	356	614
11	43	50	315	614
12	46	50	353	614
13	45	50	339	614
14	46	50	317	614
15	46	50	326	614
16	42	50	325	614
17	47	50	364	614
18	42	50	332	614
19	43	50	325	614
20	48	50	336	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 45.
STD. DEV.= 2.3

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 333.
STD. DEV.= 15.6

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	40	50	346	614
2	42	50	356	614
3	41	50	313	614
4	39	50	340	614
5	38	50	339	614
6	43	50	359	614
7	39	50	318	614
8	44	50	366	614
9	44	50	351	614
10	44	50	374	614
11	41	50	374	614
12	47	50	375	614
13	43	50	344	614
14	39	50	331	614
15	42	50	356	614
16	38	50	357	614
17	40	50	379	614
18	40	50	341	614
19	42	50	346	614
20	45	50	367	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 42.
STD. DEV.= 2.5

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 352.
STD. DEV.= 18.4

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 1
NO. OF SITES= 3
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	41	50	312	614
2	41	50	306	614
3	40	50	295	614
4	41	50	303	614
5	41	50	299	614
6	46	50	323	614
7	40	50	294	614
8	44	50	327	614
9	45	50	300	614
10	42	50	312	614
11	42	50	292	614
12	43	50	326	614
13	39	50	309	614
14	43	50	271	614
15	40	50	304	614
16	40	50	315	614
17	44	50	323	614
18	40	50	311	614
19	42	50	317	614
20	44	50	318	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 42.
STD. DEV.= 1.9

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 308.
STD. DEV.= 13.7

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	43	50	329	614
2	44	50	326	614
3	44	50	313	614
4	41	50	321	614
5	42	50	317	614
6	48	50	338	614
7	43	50	309	614
8	48	50	342	614
9	46	50	316	614
10	46	50	336	614
11	42	50	311	614
12	45	50	342	614
13	43	50	322	614
14	44	50	293	614
15	43	50	320	614
16	43	50	331	614
17	45	50	339	614
18	44	50	325	614
19	44	50	332	614
20	45	50	327	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 44.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 324.
STD. DEV.= 12.5

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	43	50	329	614
2	41	50	311	614
3	43	50	295	614
4	42	50	308	614
5	41	50	296	614
6	48	50	320	614
7	43	50	284	614
8	46	50	315	614
9	43	50	294	614
10	45	50	322	614
11	41	50	299	614
12	44	50	325	614
13	42	50	302	614
14	42	50	274	614
15	42	50	286	614
16	40	50	312	614
17	46	50	329	614
18	42	50	310	614
19	43	50	316	614
20	46	50	316	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 43.
STD. DEV.= 2.1

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 307.
STD. DEV.= 15.5

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	37	50	193	614
2	39	50	198	614
3	39	50	185	614
4	31	50	189	614
5	42	50	189	614
6	44	50	203	614
7	37	50	195	614
8	44	50	220	614
9	39	50	192	614
10	40	50	205	614
11	35	50	188	614
12	40	50	223	614
13	41	50	199	614
14	41	50	180	614
15	41	50	201	614
16	39	50	176	614
17	43	50	221	614
18	40	50	191	614
19	39	50	195	614
20	41	50	205	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 40.
STD. DEV.= 3.0

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 197.
STD. DEV.= 12.8

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	35.	70.
SITE2	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	41	50	321	614
2	40	50	309	614
3	39	50	297	614
4	39	50	312	614
5	41	50	309	614
6	43	50	326	614
7	42	50	303	614
8	44	50	330	614
9	44	50	295	614
10	39	50	318	614
11	42	50	301	614
12	41	50	330	614
13	43	50	304	614
14	38	50	280	614
15	42	50	300	614
16	39	50	311	614
17	45	50	314	614
18	42	50	317	614
19	39	50	315	614
20	39	50	323	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 41.
STD. DEV.= 2.0

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 311.
STD. DEV.= 12.7

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 1

SITE LOCATIONS	X	Y
SITE1	0.	5.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	37	50	178	614
2	36	50	174	614
3	39	50	165	614
4	29	50	170	614
5	41	50	171	614
6	44	50	196	614
7	37	50	181	614
8	42	50	213	614
9	37	50	186	614
10	38	50	199	614
11	36	50	158	614
12	37	50	205	614
13	40	50	191	614
14	38	50	157	614
15	37	50	189	614
16	36	50	175	614
17	40	50	193	614
18	37	50	170	614
19	39	50	175	614
20	41	50	184	614

NO. OF TRIALS=	20
AVE. NO. TGTS HIT=	38.
STD. DEV.=	3.1
NO. TGTS ATTEMPTED(PER TRIAL)=	50
AVE. NO. BOMBS ON TGT=	182.
STD. DEV.=	15.1
TOTAL NO. BOMBS DROPPED(PER TRIAL)=	614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 1
SITE LOCATIONS X Y
SITE1 35. 70.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	33	49	258	608
2	35	49	245	608
3	33	49	225	608
4	36	49	258	608
5	31	49	238	608
6	40	49	259	608
7	34	49	225	608
8	38	49	246	608
9	34	49	232	608
10	34	49	259	608
11	39	49	256	608
12	36	49	259	608
13	38	49	238	608
14	30	49	236	608
15	35	49	255	608
16	33	49	249	608
17	36	49	258	608
18	34	49	252	608
19	32	49	238	608
20	37	49	256	608

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 35.
STD. DEV.= 2.6

NO. TGTS ATTEMPTED(PER TRIAL)= 49

AVE. NO. BOMBS ON TGT= 247.
STD. DEV.= 11.7

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 608

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 1
SITE LOCATIONS X Y
SITE1 -35. 35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	34	50	185	614
2	32	50	169	614
3	36	50	166	614
4	29	50	178	614
5	36	50	178	614
6	41	50	193	614
7	34	50	174	614
8	41	50	197	614
9	35	50	175	614
10	34	50	198	614
11	34	50	181	614
12	36	50	206	614
13	35	50	180	614
14	31	50	160	614
15	37	50	181	614
16	36	50	153	614
17	42	50	200	614
18	37	50	179	614
19	35	50	179	614
20	34	50	185	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 35.
STD. DEV.= 3.2

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 181.
STD. DEV.= 13.4

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPO TYPE = 1
NO. OF SITES= 3
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	38	50	177	614
2	38	50	165	614
3	38	50	164	614
4	40	50	168	614
5	37	50	168	614
6	44	50	182	614
7	37	50	157	614
8	43	50	199	614
9	44	50	157	614
10	36	50	161	614
11	37	50	160	614
12	42	50	183	614
13	39	50	188	614
14	40	50	140	614
15	34	50	168	614
16	37	50	167	614
17	41	50	178	614
18	36	50	194	614
19	40	50	173	614
20	43	50	189	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 39.
STD. DEV.= 2.9

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 172.
STD. DEV.= 14.4

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	41	50	192	614
2	41	50	181	614
3	43	50	179	614
4	41	50	192	614
5	40	50	181	614
6	46	50	193	614
7	42	50	177	614
8	46	50	210	614
9	45	50	175	614
10	45	50	193	614
11	39	50	174	614
12	44	50	209	614
13	42	50	203	614
14	43	50	164	614
15	39	50	185	614
16	39	50	193	614
17	43	50	201	614
18	41	50	209	614
19	43	50	196	614
20	45	50	209	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 42.
STD. DEV.= 2.3

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 191.
STD. DEV.= 13.5

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TRG TYPE = 2
NO. OF SITES= 2
TARGET MIX= 2
SITE LOCATIONS X Y
SITE1 0. 5.
SITE2 35. 70.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	43	50	183	614
2	39	50	180	614
3	42	50	177	614
4	37	50	162	614
5	37	50	170	614
6	44	50	183	614
7	39	50	160	614
8	42	50	181	614
9	40	50	156	614
10	43	50	186	614
11	38	50	165	614
12	42	50	203	614
13	42	50	177	614
14	37	50	147	614
15	38	50	169	614
16	36	50	174	614
17	45	50	196	614
18	39	50	181	614
19	40	50	177	614
20	43	50	195	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 40.
STD. DEV.= 2.7

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 176.
STD. DEV.= 13.9

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPO TYPE = 2
NO. OF SITES= 2
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	31	50	103	614
2	33	50	113	614
3	33	50	104	614
4	28	50	111	614
5	34	50	104	614
6	37	50	100	614
7	32	50	92	614
8	38	50	135	614
9	35	50	101	614
10	38	50	101	614
11	30	50	108	614
12	35	50	119	614
13	33	50	109	614
14	31	50	92	614
15	37	50	115	614
16	32	50	104	614
17	37	50	128	614
18	36	50	90	614
19	34	50	106	614
20	36	50	118	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 34.
STD. DEV.= 2.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 108.
STD. DEV.= 11.5

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	35.	70.
SITE2	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	40	50	196	614
2	37	50	177	614
3	37	50	170	614
4	38	50	175	614
5	39	50	181	614
6	42	50	183	614
7	41	50	171	614
8	43	50	202	614
9	43	50	165	614
10	38	50	175	614
11	38	50	171	614
12	40	50	194	614
13	40	50	189	614
14	35	50	154	614
15	38	50	168	614
16	35	50	187	614
17	43	50	182	614
18	40	50	191	614
19	38	50	192	614
20	39	50	196	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 39.
STD. DEV.= 2.4

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 181.
STD. DEV.= 12.5

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 2

SITE LOCATIONS	X	Y
SITE1	0.	5.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	32	50	96	614
2	31	50	100	614
3	34	50	95	614
4	22	50	87	614
5	31	50	92	614
6	38	50	100	614
7	31	50	77	614
8	35	50	111	614
9	31	50	77	614
10	31	50	82	614
11	28	50	82	614
12	32	50	108	614
13	30	50	86	614
14	28	50	79	614
15	33	50	95	614
16	28	50	93	614
17	33	50	115	614
18	32	50	86	614
19	30	50	91	614
20	33	50	100	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 31.
STD. DEV.= 3.2

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 93.
STD. DEV.= 11.0

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TO TYPE = 2
NO. OF SITES= 1
TRGET MIX= 2
SITE LOCATIONS X Y
SITE1 -35. 35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	28	50	89	614
2	28	50	86	614
3	30	50	76	614
4	26	50	107	614
5	28	50	86	614
6	35	50	92	614
7	27	50	77	614
8	36	50	104	614
9	30	50	83	614
0	29	50	95	614
1	26	50	89	614
2	32	50	109	614
3	33	50	95	614
4	27	50	69	614
5	34	50	96	614
6	27	50	84	614
7	33	50	109	614
8	33	50	81	614
9	29	50	86	614
0	29	50	93	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 30.
STD. DEV.= 3.1

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 90.
STD. DEV.= 11.1

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	424	614
2	48	50	433	614
3	46	50	412	614
4	43	50	407	614
5	43	50	404	614
6	48	50	436	614
7	45	50	413	614
8	48	50	434	614
9	48	50	421	614
10	48	50	423	614
11	44	50	419	614
12	48	50	431	614
13	45	50	419	614
14	46	50	386	614
15	45	50	424	614
16	45	50	431	614
17	46	50	440	614
18	45	50	404	614
19	45	50	419	614
20	49	50	422	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 46.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 420.
STD. DEV.= 13.1

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 3
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.
SITE3	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	424	614
2	48	50	433	614
3	46	50	412	614
4	43	50	407	614
5	43	50	404	614
6	48	50	436	614
7	45	50	413	614
8	48	50	434	614
9	48	50	421	614
10	48	50	423	614
11	44	50	419	614
12	48	50	431	614
13	45	50	419	614
14	46	50	386	614
15	45	50	424	614
16	45	50	431	614
17	46	50	440	614
18	45	50	404	614
19	45	50	419	614
20	49	50	422	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 46.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 420.
STD. DEV.= 13.1

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.
SITE2	35.	70.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	402	614
2	45	50	396	614
3	45	50	371	614
4	44	50	395	614
5	44	50	387	614
6	49	50	420	614
7	45	50	390	614
8	47	50	409	614
9	48	50	391	614
10	47	50	423	614
11	43	50	396	614
12	48	50	406	614
13	44	50	401	614
14	45	50	378	614
15	45	50	385	614
16	43	50	406	614
17	46	50	429	614
18	44	50	392	614
19	44	50	405	614
20	48	50	402	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 45.
STD. DEV.= 1.8

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 399.
STD. DEV.= 14.4

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 2
TARGET MIX= 3
SITE LOCATIONS

	X	Y
SITE1	0.	5.
SITE2	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	44	50	269	614
2	44	50	251	614
3	44	50	242	614
4	36	50	241	614
5	43	50	260	614
6	47	50	290	614
7	43	50	247	614
8	47	50	285	614
9	44	50	250	614
10	43	50	271	614
11	41	50	252	614
12	43	50	280	614
13	42	50	258	614
14	44	50	252	614
15	43	50	266	614
16	40	50	248	614
17	45	50	297	614
18	42	50	262	614
19	42	50	254	614
20	43	50	269	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 43.
STD. DEV.= 2.4

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 262.
STD. DEV.= 16.0

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPO TYPE = 2
NO. OF SITES= 2
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	35.	70.
SITE2	-35.	35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	42	50	422	614
2	42	50	412	614
3	43	50	396	614
4	41	50	397	614
5	42	50	403	614
6	44	50	414	614
7	44	50	405	614
8	44	50	428	614
9	45	50	399	614
10	41	50	395	614
11	43	50	408	614
12	42	50	413	614
13	44	50	397	614
14	40	50	379	614
15	43	50	397	614
16	41	50	411	614
17	47	50	423	614
18	43	50	403	614
19	41	50	403	614
20	42	50	412	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 43.
STD. DEV.= 1.7

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 406.
STD. DEV.= 11.5

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 3

SITE LOCATIONS	X	Y
SITE1	0.	5.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	43	50	235	614
2	44	50	231	614
3	44	50	223	614
4	38	50	223	614
5	43	50	258	614
6	48	50	274	614
7	42	50	233	614
8	45	50	277	614
9	45	50	242	614
10	44	50	265	614
11	43	50	230	614
12	44	50	263	614
13	42	50	239	614
14	44	50	221	614
15	43	50	241	614
16	38	50	235	614
17	45	50	270	614
18	40	50	246	614
19	42	50	235	614
20	45	50	247	614

NO. OF TRIALS=	20
AVE. NO. TGTS HIT=	43.
STD. DEV.=	2.4
NO. TGTS ATTEMPTED(PER TRIAL)=	50
AVE. NO. BOMBS ON TGT=	244.
STD. DEV.=	17.5
TOTAL NO. BOMBS DROPPED(PER TRIAL)=	614

TPJ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 3
SITE LOCATIONS X Y
SITE1 35. 70.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO. BOMBS ON TGT	NO. BOMBS DROPPED
1	36	49	326	608
2	37	49	325	608
3	38	49	315	608
4	40	49	335	608
5	35	49	315	608
6	40	49	344	608
7	39	49	311	608
8	40	49	333	608
9	39	49	321	608
10	36	49	344	608
11	42	49	357	608
12	39	49	352	608
13	41	49	327	608
14	38	49	314	608
15	37	49	332	608
16	33	49	327	608
17	38	49	351	608
18	37	49	333	608
19	35	49	318	608
20	39	49	341	608

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 38.
STD. DEV.= 2.2

NO. TGTS ATTEMPTED(PER TRIAL)= 49

AVE. NO. BOMBS ON TGT= 331.
STD. DEV.= 13.7

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 608

TPQ TYPE = 2
NO. OF SITES= 1
TARGET MIX= 3
SITE LOCATIONS X Y
SITE1 -35. 35.

TRIAL NO.	TGTS HIT	TGTS ATTEMPTED	NO.BOMBS ON TGT	NO. BOMBS DROPPED
1	39	50	255	614
2	36	50	226	614
3	40	50	217	614
4	32	50	226	614
5	40	50	250	614
6	44	50	262	614
7	40	50	227	614
8	45	50	269	614
9	41	50	240	614
10	37	50	261	614
11	40	50	234	614
12	39	50	257	614
13	38	50	242	614
14	36	50	234	614
15	39	50	256	614
16	37	50	225	614
17	44	50	281	614
18	40	50	243	614
19	36	50	245	614
20	38	50	239	614

NO. OF TRIALS= 20

AVE. NO. TGTS HIT= 39.
STD. DEV.= 3.1

NO. TGTS ATTEMPTED(PER TRIAL)= 50

AVE. NO. BOMBS ON TGT= 244.
STD. DEV.= 16.8

TOTAL NO. BOMBS DROPPED(PER TRIAL)= 614

```
      DIMENSION R(80)                                                    PET00010
      REAL*8 SEED                                                        PET00020
      LOGICAL RIPPLE,SINGLE                                              PET00030
      IX=13579                                                           PET00040
      TIME=.15                                                           PET00050
      READ(5,1001) NBOMB,NTRIAL,IALT,RIPPLE,SINGLE,ITLOCE                PET00060
      IF(IALT.EQ.10000) IAIR=300                                         PET00070
      IF(IALT.EQ.20000) IAIR=500                                         PET00080
      DO 9999 ICEP=110,120,10                                            PET00090
      CEP=ICEP                                                           PET00100
      IF(IALT.EQ.10000) SDBD=12.4                                        PET00110
      IF(IALT.EQ.10000) SDBR=14.42                                       PET00120
      IF(IALT.EQ.20000) SDBD=26.95                                       PET00130
      IF(IALT.EQ.20000) SDBR=31.25                                       PET00140
      SDTD=CEP/1.1774                                                    PET00150
      SDTR=SDTD                                                          PET00160
      IF(RIPPLE) WRITE(6,1040)IAIR,TIME,IALT,ITLOCE                      PET00170
      IF((.NOT.RIPPLE).AND.(.NOT.SINGLE)) WRITE(6,1050)                  PET00180
     1 IAIR,IALT,ITLOCE                                                  PET00190
      IF(SINGLE) WRITE(6,1060) IAIR,IALT,ITLOCE                          PET00200
      WRITE(6,1000) ICEP                                                 PET00210
      DO 9998 IDIST=10,100,10                                            PET00220
      IF((IDIST.EQ.60).AND.(NBOMB.LE.10)) GO TO 1500                     PET00230
      IF((NBOMB.EQ.20).AND.((IDIST.EQ.30).OR.(IDIST.EQ.50)               PET00240
     1 .OR.(IDIST.EQ.70).OR.(IDIST.EQ.90))) GO TO 1500                   PET00250
      GO TO 1600                                                         PET00260
 1500 IF(RIPPLE) WRITE(6,1040)IAIR,TIME,IALT,ITLOCE                      PET00270
      IF((.NOT.RIPPLE).AND.(.NOT.SINGLE)) WRITE(6,1050)                  PET00280
     1 IAIR,IALT,ITLOCE                                                  PET00290
      IF(SINGLE) WRITE(6,1060) IAIR,IALT,ITLOCE                          PET00300
      WRITE(6,1000) ICEP                                                 PET00310
 1600 TR=IDIST                                                           PET00320
      WRITE(6,1010) IDIST                                                PET00330
      SDSD=SQRT(SDTD**2-SDBD**2)                                         PET00340
      SDSR=SQRT(SDTR**2-SDBR**2)                                         PET00350
      DO 3000 IB=1,NBOMB                                                 PET00360
      IBERN=0                                                            PET00370
      DO 2999 J=1,NTRIAL                                                 PET00380
      CALL RANDU(IX,IY,YFL)                                              PET00390
      IX=IY                                                              PET00400
      SEED=YFL                                                           PET00410
C                                                                        PET00420
CC    BEGIN ONE-BOMB-AT-A-TIME ROUTINE HERE                              PET00430
C                                                                        PET00440
      IF(.NOT.SINGLE) GO TO 1900                                         PET00450
      NN=4*NBOMB                                                         PET00460
      ISCORE=0                                                           PET00470
      CALL GGNOR(SEED,NN,R)                                              PET00480
```

```
      K1=1                                                              PET00490
      IF(ITLOCE.EQ.0) GO TO 1700                                        PET00500
      CALL RANDU(IX,IY,YFL)                                             PET00510
      IX=IY                                                             PET00520
      RN=YFL                                                            PET00530
      TETA=360*RN*.01745                                                PET00540
      XACT=ITLOCE*COS(TETA)                                             PET00550
      YACT=ITLOCE*SIN(TETA)                                             PET00560
 1700 DO 1800 K=1,NBOMB                                                 PET00570
      X=R(K1)*SDSD                                                      PET00580
      Y=R(K1+1)*SDSR                                                    PET00590
      X1=R(K1+2)*SDBD                                                   PET00600
      Y1=R(K1+3)*SDBR                                                   PET00610
      IF(ITLOCE.NE.0) X=X-XACT                                          PET00620
      IF(ITLOCE.NE.0) Y=Y-YACT                                          PET00630
      X2=X+X1                                                           PET00640
      Y2=Y+Y1                                                           PET00650
      DIS=SQRT(X2**2+Y2**2)                                             PET00660
      IF(DIS.LE.TR) ISCORE=ISCORE+1                                     PET00670
      K1=K1+4                                                           PET00680
 1800 CONTINUE                                                          PET00690
      GO TO 2200                                                        PET00700
 1900 NN=2*NBOMB+2                                                      PET00710
C                                                                       PET00720
C     CALCULATE MPI                                                     PET00730
C                                                                       PET00740
      CALL GGNOR(SEED,NN,R)                                             PET00750
      X=R(1)*SDSD                                                       PET00760
      Y=R(2)*SDSR                                                       PET00770
      IF(ITLOCE.EQ.0) GO TO 1950                                        PET00780
      CALL RANDU(IX,IY,YFL)                                             PET00790
      IX=IY                                                             PET00800
      RN=YFL                                                            PET00810
      TETA=360*RN*.01745                                                PET00820
      XACT=ITLOCE*COS(TETA)                                             PET00830
      YACT=ITLOCE*SIN(TETA)                                             PET00840
      X=X-XACT                                                          PET00850
      Y=Y-YACT                                                          PET00860
C                                                                       PET00870
C     GO TO RIPPLE OR CLUSTER, AS APPROPRIATE                           PET00880
C                                                                       PET00890
 1950 ISCORE=0                                                          PET00900
      IF(RIPPLE) GO TO 2050                                             PET00910
C                                                                       PET00920
C     BEGIN CLUSTER HERE                                                PET00930
C                                                                       PET00940
      DO 2000 K=1,NBOMB                                                 PET00950
      KK=2*K+1                                                          PET00960
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      KKK=2*K+2                                                          PET00970
      X1=R(KK)*SDBD                                                      PET00980
      Y1=R(KKK)*SDBR                                                     PET00990
      X2=X+X1                                                            PET01000
      Y2=Y+Y1                                                            PET01010
      DIS=SQRT(X2**2+Y2**2)                                              PET01020
      IF(DIS.LE.TR) ISCORE=ISCORE+1                                      PET01030
 2000 CONTINUE                                                           PET01040
      GO TO 2200                                                         PET01050
C                                                                        PET01060
C     BEGIN RIPPLE HERE                                                  PET01070
C                                                                        PET01080
 2050 IF(IALT.EQ.10000) DIST=.5148*300.*TIME                             PET01090
      IF(IALT.EQ.20000) DIST=.5148*500.*TIME                             PET01100
      DO 2100 K=1,NBOMB                                                  PET01110
      KK=2*K+1                                                           PET01120
      KKK=2*K+2                                                          PET01130
      X1=R(KK)*SDBD                                                      PET01140
      Y1=R(KKK)*SDBR                                                     PET01150
      AI=K                                                               PET01160
      N=NBOMB                                                            PET01170
      M=N/2                                                              PET01180
      IF(M*2.EQ.N) Y12=Y-(M+.5-AI)*DIST                                  PET01190
      IF(M*2.NE.N) Y12=Y-(M+1.-AI)*DIST                                  PET01200
      X2=X+X1                                                            PET01210
      Y2=Y12+Y1                                                          PET01220
      DIS=SQRT(X2**2+Y2**2)                                              PET01230
      IF(DIS.LE.TR) ISCORE=ISCORE+1                                      PET01240
 2100 CONTINUE                                                           PET01250
 2200 IF(ISCORE.GE.IB) IBERN=IBERN+1                                     PET01260
 2999 CONTINUE                                                           PET01270
      BERN=IBERN                                                         PET01280
      TRIALS=NTRIAL                                                      PET01290
      P=BERN/TRIALS                                                      PET01300
      CI=1.96*SQRT((BERN*(TRIALS-BERN))/TRIALS**3)                       PET01310
      ACI=P-CI                                                           PET01320
      IF(ACI.LT.0.) ACI=0.                                               PET01330
      UCI=P+CI                                                           PET01340
      IF(UCI.GT.1.) UCI=1.                                               PET01350
      WRITE(6,1020) IB,P,ACI,UCI                                         PET01360
 3000 CONTINUE                                                           PET01370
      WRITE(6,1030)                                                      PET01380
 9998 CONTINUE                                                           PET01390
 1000 FORMAT('0',T39,'RANGE',T47,'NUMBER',T56,'PROBABILITY',             PET01400
     1' OF',T73,'95% CONFIDENCE LIMITS'/T39,'R FROM',T49,                PET01410
     2'OF',T56,'B BOMBS WITHIN',T76,'ON PROBABILITY'/T35,                PET01420
     3 'CEP TARGET  BOMBS B  R METERS OF TGT  LOWER',T89,                PET01430
     4'UPPER'/T35,'***',T39,'******',T47,'********',T56,                 PET01440
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     5'**********',T73,'*****',T89,'*****'/T35,I3)                    PET01450
1001 FORMAT(I5/I5/I5/L1/L1/I5)                                        PET01460
1010 FORMAT('+',T40,I3)                                               PET01470
1020 FORMAT('+',T49,I3,T61,F4.2,T73,F5.3,T89,F5.3/)                   PET01480
1030 FORMAT(' ')                                                      PET01490
1040 FORMAT('1',/'0'/'0'/'0'/'0',T42,                                 PET01500
     1'HIT PROBABILITIES FOR ',I3,'KNOT, RIPPLE DROP,'/T43,           PET01510
     2'INTERVALOMETER TIME=',F3.2,'SEC, FROM ',I5,' FEET.'/           PET01520
     3 T52,'TARGET LOCATION ERROR ',I3,' METERS')                     PET01530
1050 FORMAT('1',/'0'/'0'/'0'/'0',T35,'HIT PROBABILITIES',             PET01540
     1' FOR ',I3,'KNOT, CLUSTER DROP FROM ',I5,' FEET.'/              PET01550
     2  T43,'TARGET LOCATION ERROR ',I3,' METERS')                    PET01560
1060 FORMAT('1',/'0'/'0'/'0'/'0',T35,'HIT PROBABILITIES',             PET01570
     1' FOR ',I3,'KNOT, SINGLE DROPS FROM ',I5,' FEET.'/              PET01580
     2  T43,'TARGET LOCATION ERROR ',I3,' METERS')                    PET01590
9999 CONTINUE                                                         PET01600
     STOP                                                             PET01610
     END                                                              PET01620
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      DIMENSION X2(100), Y2(100)                                        OLE00010
      DIMENSION TGTM(2),ARAP(6),TTA(4),TTB(4),APRIOR(4)
      DIMENSION ITTB(4),ITTA(4)                                         OLE00040
      DIMENSION AR(7,2)                                                 OLE00050
      DIMENSION ITGTIM(10,3)                                            OLE00060
      DIMENSION IATGT(50,7)                                             OLE00070
      DIMENSION ACTYP(10),IACTYP(10,3)                                  OLE00080
      DIMENSION IAIR(50,7)                                              OLE00090
      DIMENSION ITEMTG(7),XZ(3),YZ(3)                                   OLE00100
      DIMENSION MISSON(50,7)                                            OLE00110
      DIMENSION IDSITE(3,50,3)                                          OLE00120
      DIMENSION NTGS(3)                                                 OLE00130
      DIMENSION ITMISS(7)                                               OLE00140
      DIMENSION R(3)                                                    OLE00150
      DIMENSION RRR(102)                                                OLE00160
      REAL LR,LR1(4)/20.,40.,60.,80./,LR2(4)/20.,40.,60.,80./           OLE00170
      DATA TIME/.05/                                                    OLE00180
      LOGICAL RIPPLE/.TRUE./                                            OLE00190
      DATA R/3*0.0/                                                     OLE00200
      DATA IATGT/350*0/                                                 OLE00220
      DATA ITGTIM/10*5.0,10.20.30,40,50,60,70,80,90,5,10,15,20,25,30,   OLE00230
     135.40.45.50/                                                      OLE00240
      DATA AR/0.,35.,-35.,40.,30.,-30.,-40.,5.,2*35.,4*40./             OLE00250
      DATA IX/13579/                                                    OLE00270
      DATA ITTA/1.1.2.2/                                                OLE00280
      DATA ITTB/1.1.2.2/                                                OLE00260
      DATA TGTM/1.,.8/.ARAP/.3,.6,.7,.8,.9,1.0/                         OLE00290
      DATA APRIOR/.01,.05,.02,.06/                                      OLE00310
      DATA TTA/.25,.50,.75,1.0/                                         OLE00300
      DATA TTB/.25,.50,.75,1.0/                                         OLE00320
      DATA IAIR/350*0/,ACTYP/.1,.2,.3,.4,.5,.6,.7,.8,.9,1.0/            OLE00330
      DATA IACTYP/2*1,2*2,2*3,2*4,2*5,10*500,2*6,2*10,2*14,             OLE00340
     12*20.2*6/                                                         OLE00350
      DATA XZ/0.,35.,-35./,YZ/5.,35.,35./                               OLE00360
      DATA NTGS/3*0/                                                    OLE00370
      DATA IDSITE/450*0/                                                OLE00380
      DATA ITMISS/7*0/                                                  OLE00390
      DATA ITEMTG/7*0/                                                  OLE00400
      NTGTGE=0                                                          OLE00410
C     NUMBER OF TARGETS TO BE GENERATED
      ITNTGT=50                                                         OLE00420
      MCOUNT=1                                                          OLE00430
      NACTGT=50                                                         OLE00440
C     RANGE RESTRICTION
      MTPQI=35                                                          OLE00450
C     TYPE OF SYSTEM BEING UTILIZED
      ITPTPQ=2                                                          OLE00460
C     NUMBER OF SITES BE...     ...ED
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      NSITES=2                                                          OLE00470
      AA=2.0                                                            OLE00480
C     NUMBER OF AIRCRAFT TO BE GENERATED
      NAIRCF=50                                                         OLE00490
C
C           TARGET GENERATING SUBPROGRAM
C
C     GENERATE THE TARGETS
      DO 100 I=1,ITNTGT                                                 OLE00500
C     FIND OUT WHICH REGION THE TARGET WILL BE IN
      CALL RANDU(IX,IY,YFL)                                             OLE00510
      IX=IY                                                             OLE00520
      RN=YFL                                                            OLE00530
      IF(RN.GT.TGTM(1)) GO TO 120                                       OLE00540
C     TARGET IS IN REGION A OR D
      CALL RANDU(IX,IY,YFL)                                             OLE00550
      IX=IY                                                             OLE00560
      RN=YFL                                                            OLE00570
      IF(RN.GT.TGTM(2)) GO TO 130                                       OLE00580
C     TARGET IS IN REGION A
      CALL RANDU(IX,IY,YFL)                                             OLE00590
      IX=IY                                                             OLE00600
      RN=YFL                                                            OLE00610
      DO 101 L=1,6                                                      OLE00620
C     WHICH FIREBASE/OUTPOST IS REPORTING THIS TARGET
      IF(RN.GT.ARAP(L)) GO TO 101                                       OLE00630
      IAREA=L+1                                                         OLE00640
      GO TO 102                                                         OLE00650
  101 CONTINUE                                                          OLE00660
C     WHAT TYPE OF TARGET IS IT
  102 CALL RANDU(IX,IY,YFL)                                             OLE00670
      IX=IY                                                             OLE00680
      RN=YFL                                                            OLE00690
      DO 103 L=1,4                                                      OLE00700
      IF(RN.GT.ITTA(L)) GO TO 103                                       OLE00710
      ITGTYP=ITTA(L)                                                    OLE00720
      GO TO 104                                                         OLE00730
  103 CONTINUE                                                          OLE00740
C     WHAT IS THE RANGE TO THE TARGET
  104 CALL RANDU(IX,IY,YFL)                                             OLE00750
      IX=IY                                                             OLE00760
      RN=YFL                                                            OLE00770
C     IF FIREBASE IS GENERATING THE TARGET RANGE WILL BE
C     FROM 5 TO 30 MILES
      IF(IAREA.LT.4) RANGE=25.*RN+5.                                    OLE00780
C     IF OUTPOST IS GENERATING THE TARGET , RANGE WILL BE
C     FROM 0 TO 3 MILES
      IF(IAREA.GT.3) RANGE=RN*3.                                        OLE00790
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C       WHAT IS THE PRIORITY OF THE TARGET
  108   CALL RANDU(IX,IY,YFL)                                          OLE00800
        IX=IY                                                           OLE00810
        RN=YFL                                                          OLE00820
        IF(RN.GT.APRIOR(1)) GO TO 109                                   OLE00830
        PRORTY=1                                                        OLE00840
        GO TO 111                                                       OLE00850
  109   IF(RN.GT.APRIOR(2)) GO TO 110                                   OLE00860
        PRORTY=2                                                        OLE00870
        GO TO 111                                                       OLE00880
  110   PRORTY=3                                                        OLE00890
C       WHAT IS THE BEARING FROM THE SITE WHICH REPORTS THE TARGET
C       TO THE TARGET
  111   CALL RANDU(IX,IY,YFL)                                          OLE00900
        IX=IY                                                           OLE00910
        RN=YFL                                                          OLE00920
        ITETA=360*RN                                                    OLE00930
C       TABULATE INFORMATION ON THIS TARGET
        GO TO 140                                                       OLE00940
C       TARGET IS IN REGION D
  130   IAREA=1                                                         OLE00950
        ITGTYP=1                                                        OLE00960
C       WHAT IS THE RANGE TO THE TARGET
        CALL RANDU(IX,IY,YFL)                                          OLE00970
        IX=IY                                                           OLE00980
        RN=YFL                                                          OLE00990
        RANGE=25.*RN+5.                                                 OLE01000
C       WHAT IS THE PRIORITY OF THE TARGET
        CALL RANDU(IX,IY,YFL)                                          OLE01010
        IX=IY                                                           OLE01020
        RN=YFL                                                          OLE01030
        IF(RN.GT.APRIOR(3)) GO TO 131                                   OLE01040
        PRORTY=1                                                        OLE01050
        GO TO 133                                                       OLE01060
  131   IF(RN.GT.APRIOR(4)) GO TO 132                                   OLE01070
        PRORTY=2                                                        OLE01080
        GO TO 133                                                       OLE01090
  132   PRORTY=3                                                        OLE01100
C       CALCULATE THE BEARING TO THIS TARGET
  133   CALL RANDU(IX,IY,YFL)                                          OLE01110
        IX=IY                                                           OLE01120
        RN=YFL                                                          OLE01130
        ITETA=180*RN                                                    OLE01140
        TETA=ITETA*.01745                                               OLE01150
C       WHAT IS THE TARGET X COORDINATE WITH RESPECT TO THE
C       ORIGIN
        XSYCEN=RANGE*COS(TETA)                                          OLE01160
C       WHAT IS THE TARGET Y COORDINATE WITH RESPECT TO THE
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C       ORIGIN
        YSYCEN=RANGE*SIN(TETA)                                          OLE01170
        GO TO 141                                                       OLE01180
  120 CALL RANDU(IX,IY,YFL)                                             OLE01190
C       TARGET IS IN REGION B OR C
C       CALCULATE THE BEARING
C       TO THIS TARGET
        IX=IY                                                           OLE01200
        RN=YFL                                                          OLE01210
        ITETA=180*RN                                                    OLE01220
C       WHAT IS THE RANGE TO THE TARGET
        CALL RANDU(IX,IY,YFL)                                           OLE01230
        IX=IY                                                           OLE01240
        RN=YFL                                                          OLE01250
        RANGE=RN*210+40                                                 OLE01260
        TETA=ITETA*.01745                                               OLE01270
C       X COORD. WRT ORIGIN
        XSYCEN=RANGE*COS(TETA)                                          OLE01280
C       Y COORD. WRT ORIGIN
        YSYCEN=RANGE*SIN(TETA)                                          OLE01290
        AX=XSYCEN                                                       OLE01300
        BY=YSYCEN                                                       OLE01310
C       INSURE THAT TARGET IS NOT INSIDE AN A REGION
        DO 121 L=2,3,1                                                  OLE01320
        IF(((AX-AR(L,1))**2+(BY-AR(L,2))**2).LE.25) GO TO 120           OLE01330
  121 CONTINUE                                                          OLE01340
        DO 122 L=4,7,1                                                  OLE01350
        IF(((AX-AR(L,1))**2+(BY-AR(L,2))**2).LE.9) GO TO 120
  122 CONTINUE                                                          OLE01370
C       IS THE TARGET IN REGION B OR REGION C
        IF(RANGE.GT.125) GO TO 125                                      OLE01380
C       TARGET IS IN REGION B
        PRORTY=4                                                        OLE01430
C       WHAT TYPE OF TARGET HAS BEEN ENCOUNTERED
        CALL RANDU(IX,IY,YFL)                                           OLE01440
        IX=IY                                                           OLE01450
        RN=YFL                                                          OLE01460
        DO 124 L=1,4                                                    OLE01470
        IF(RN.GT.TTB(L)) GO TO 124                                      OLE01480
        ITGTYP=ITTB(L)                                                  OLE01490
C       TABULATE INFORMATION ON THIS TARGET
        GO TO 141                                                       OLE01500
  124 CONTINUE                                                          OLE01510
C       TARGET IS IN REGION C
  125 PRORTY=5
C       WHAT TYPE OF TARGET IS IT
        CALL RANDU(IX,IY,YFL)                                           OLE01540
        IX=IY                                                           OLE01550
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      RN=YFL                                                          OLE01560
      IF(RN.LT..5) GO TO 126                                          OLE01570
      ITGTYP=4                                                        OLE01580
C     TABULATE INFORMATION ON THIS TARGET
      GO TO 141                                                       OLE01590
  126 ITGTYP=4                                                        OLE01600
C     TABULATE INFORMATION ON THIS TARGET
      GO TO 141                                                       OLE01610
  140 TETA=ITETA*.01745                                               OLE01620
C     X COORD. WRT SITE
      XS=RANGE*COS(TETA)                                              OLE01630
C     Y COORD. WRT SITE
      YS=RANGE*SIN(TETA)                                              OLE01640
C     X COORD. WRT ORIGIN
      XSYCEN=XS+AR(IAREA,1)                                           OLE01650
C     Y COORD. WRT ORIGIN
      YSYCEN=YS+AR(IAREA,2)                                           OLE01660
C     TABULATE PARAMETERS OF THE TARGET
  141 IATGT(I,1)=I                                                    OLE01670
      IATGT(I,3)=XSYCEN                                               OLE01680
      IATGT(I,4)=YSYCEN                                               OLE01690
      IATGT(I,5)=ITGTYP                                               OLE01700
      IATGT(I,6)=PRORTY                                               OLE01710
      NTGTGE=NTGTGE+1                                                 OLE01720
      IF(NTGTGE.GT.ITGTIM(MCOUNT,1)) GO TO 143                        OLE01730
  142 IATGT(I,2)=ITGTIM(MCOUNT,2)                                     OLE01740
      GO TO 100                                                       OLE01750
  143 MCOUNT=MCOUNT+1                                                 OLE01760
      NTGTGE=1                                                        OLE01770
      GO TO 142                                                       OLE01780
  100 CONTINUE                                                        OLE01790
C
C           AIRCRAFT GENERATING SUBPROGRAM
C
C     GENERATE THE AIRCRAFT FOR THE PROBLEM
      DO  150 I=1,NAIRCF                                              OLE01800
C     WHAT TIME WILL THE AIRCRAFT REPORT IN
      CALL RANDU(IX,IY,YFL)                                           OLE01810
      IX=IY                                                           OLE01820
      RN=YFL                                                          OLE01830
      RTIME=9.-RN*8.                                                  OLE01840
      IF(I.GT.1) GO TO 151                                            OLE01850
      IAIR(I,1)=RTIME                                                 OLE01860
      GO TO 152                                                       OLE01870
  151 M=I-1                                                           OLE01880
      IAIR(I,1)=RTIME+IAIR(M,1)                                       OLE01890
C     HOW MUCH TIME WILL THE AIRCRAFT HAVE ON STATION
  152 CALL RANDU(IX,IY,YFL)                                           OLE01900
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      IX=IY                                                          OLE01910
      RN=YFL                                                         OLE01920
      XX=90*RN+30                                                    OLE01930
      IAIR(I,2)=XX                                                   OLE01940
C     WHAT TYPE OF AIRCRAFT IS IT
      CALL RANDU(IX,IY,YFL)                                          OLE01950
      IX=IY                                                          OLE01960
      RN=YFL                                                         OLE01970
      DO 153 L=1,10                                                  OLE01980
      IF(RN.GT.ACTYP(L)) GO TO 153                                   OLE01990
C     TABULATE VALUES FOR THE AIRCRAFT PARAMETERS
      IAIR(I,3)=IACTYP(L,1)                                          OLE02000
      IAIR(I,4)=IACTYP(L,2)                                          OLE02010
      IAIR(I,5)=IACTYP(L,3)                                          OLE02020
      GO TO 150                                                      OLE02030
  153 CONTINUE                                                       OLE02040
  150 CONTINUE                                                       OLE02050
C
C             INITILAZE FOR MAIN CONTROL PROGRAM
C
      ITMIXN=1
      WRITE(6,2055)
      WRITE(6,2050)ITPTPQ,NSITES,ITMIXN
      WRITE(6,2051) (JJ,XZ(JJ),YZ(JJ),JJ=1,NSITES)
      WRITE(6,2056)
      WRITE(6,2052)
      ATHS=0                                                         OLE02120
C     HOW MANY TIMES WILL THE SIMULATION BE REPEATED
      NOT=20                                                         OLE02130
      ANBOTS=0                                                       OLE02140
      ANBOT=0                                                        OLE02150
      ATH=0                                                          OLE02160
      DO 9999 LAL=1,NOT                                              OLE02170
      IX=9999+2*LAL                                                  OLE02180
      ITGTMC=1                                                       OLE02190
      IMISS=1                                                        OLE02200
      NAMISS=0                                                       OLE02210
      MISSC=1                                                        OLE02220
      NMISS=0                                                        OLE02230
      NCHECK=0                                                       OLE02240
      KILL=0                                                         OLE02250
      NBOT=0                                                         OLE02260
      NTBOMB=0                                                       OLE02270
      NTA=0                                                          OLE02280
C     REINITIALIZE MATRIX VALUES
      DO 699 L=1,NAIRCF                                              OLE02290
      IAIR(L,6)=0                                                    OLE02300
  699 CONTINUE                                                       OLE02310
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      DO 698 L=1,ITNTGT                                                  OLE02320
      IATGT(L,7)=0                                                       OLE02330
  698 CONTINUE                                                           OLE02340
      DO 696 L=1,7                                                       OLE02350
      DO 697 LA=1,50                                                     OLE02360
      MISSON(LA,L)=0                                                     OLE02370
  697 CONTINUE                                                           OLE02380
  696 CONTINUE                                                           OLE02390
      DO 701 L=1,NAIRCF                                                  OLE02400
      IAIR(L,7)=300                                                      OLE02410
  701 CONTINUE                                                           OLE02420
C
C           MAIN CONTROL PROGRAM
C
C     HAVE ALL AIRCRAFT BEEN ASSIGNED
  800 IF(NMISS.EQ.NAIRCF) GO TO  810                                     OLE02430
C     ARE THERE ANY BOMBING MISSIONS WAITING IN THE QUEUE
      IF(NAMISS.EQ.0) GO TO 803                                          OLE02440
C     WHAT COMES FIRST A BOMBING MISSION
C     OR A NEW AIRCRAFT REPORTING IN
      IF(MISSON(MISSC,6).GT.IAIR(IMISS,1)) GO TO 803                     OLE02450
C     EXECUTE A BOMBING MISSION
      GO TO 700                                                          OLE02460
C     REMOVE THE EXECUTED MISSION FROM THE SITES QUEUE
  801 ITARGN=MISSON(MISSC,2)                                             OLE02470
      IASITE=MISSON(MISSC,3)                                             OLE02480
      LL=1                                                               OLE02490
      LP=NTGS(IASITE)                                                    OLE02500
      DO 802 L=1,LP                                                      OLE02510
      LPI=LL+1                                                           OLE02520
      IDSITE(IASITE,LL,1)=IDSITE(IASITE,LPI,1)                           OLE02530
      IDSITE(IASITE,LL,2)=IDSITE(IASITE,LPI,2)                           OLE02540
      IDSITE(IASITE,LL,3)=IDSITE(IASITE,LPI,3)                           OLE02550
      LL=LL+1                                                            OLE02560
  802 CONTINUE                                                           OLE02570
C     UPDATE COUNTING VARIABLES
      NTGS(IASITE)=NTGS(IASITE)-1                                        OLE02580
      NAMISS=NAMISS-1                                                    OLE02590
      MISSC=MISSC+1                                                      OLE02600
C     MARK TARGET AS ATTACKED
      IATGT(ITARGN,7)=3                                                  OLE02610
C     RETURN TO START OF CONTROL PROGRAM
      GO TO 800                                                          OLE02620
C     HAVE ALL TARGETS BEEN REPORTED
  803 IF(ITGTMC.EQ.10) GO TO 199                                         OLE02630
C     SOME TARGETS NOT REPORTED YET
      ITGTMP=ITGTMC+1                                                    OLE02640
C     WHICH COMES FIRST AN AIRCRAFT REPORTING IN OR NEW TARGETS
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C       BECOMING AVAILABLE
        IF(IAIR(IMISS,1).LT.ITGTIM(ITGTMP,2)) GO TO 199                    OLE02650
C       TARGETS COME FIRST. ADD TARGETS
        ITGTMC=ITGTMC+1                                                    OLE02660
C       RETURN TO START OF MAIN PROGRAM
        GO TO 800                                                          OLE02670
  810   NCHECK=1                                                           OLE02680
C       IF ALL MISSIONS HAVE BEEN FLOWN THEN END PROGRAM
  813   IF(NAMISS.EQ.0) GO TO 820                                          OLE02690
C       EXECUTE A MISSION
        GO TO 700                                                          OLE02700
C       REMOVE THE EXECUTED MISSION FROM THE SITES QUEUE
  811   ITARGN=MISSON(MISSC,2)                                             OLE02710
        IASITE=MISSON(MISSC,3)                                             OLE02720
        LL=1                                                               OLE02730
        LP=NTGS(IASITE)                                                    OLE02740
        DO 812 L=1,LP                                                      OLE02750
        LPI=LL+1                                                           OLE02760
        IDSITE(IASITE,LL,1)=IDSITE(IASITE,LPI,1)                           OLE02770
        IDSITE(IASITE,LL,2)=IDSITE(IASITE,LPI,2)                           OLE02780
        IDSITE(IASITE,LL,3)=IDSITE(IASITE,LPI,3)                           OLE02790
        LL=LL+1                                                            OLE02800
  812   CONTINUE                                                           OLE02810
C       UPDATE COUNTING VARIABLES
        NTGS(IASITE)=NTGS(IASITE)-1                                        OLE02820
        NAMISS=NAMISS-1                                                    OLE02830
        MISSC=MISSC+1                                                      OLE02840
C       MARK TARGET AS ATTACKED
        IATGT(ITARGN,7)=3                                                  OLE02850
        GO TO 813                                                          OLE02860
C
C                   ASSIGNMENT SUBPROGRAM
C
C       MAKE AN ASSIGNMENT USING THE ASSIGNMENT SUBPROGRAM
  199   DO 200 J=1,5                                                       OLE02870
C       HOW MANY TARGETS HAVE BEEN REPORTED
        NTGTS=ITGTIM(ITGTMC,3)                                             OLE02880
C       SEARCH FOR THE FIRST AVAIALABLE TARGET OF HIGHEST
C       PRIORITY
        DO 201 L=1,NTGTS                                                   OLE02890
        IF((IATGT(L,6).NE.J).OR.(IATGT(L,7).GT.0)) GO TO 201               OLE02900
C       A TARGET HAS BEEN FOUND
        IATGT(L,7)=1                                                       OLE02910
        ITARGN=IATGT(L,1)                                                  OLE02920
        DO 202 M=1,7                                                       OLE02940
        ITEMTG(M)=IATGT(L,M)                                               OLE02950
  202   CONTINUE                                                           OLE02960
        GO TO 203                                                          OLE02970
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  201 CONTINUE                                                          OLE02980
  200 CONTINUE                                                          OLE02990
C     THERE ARE NO TARGETS FOR THIS AIRCRAFT
      GO TO 250                                                         OLE03000
C     FIND SITE WHICH WILL GIVE MIN. CEP
  203 M=0                                                               OLE03010
      NK=0                                                              OLE03020
C     CALCULATE RANGE FROM ALL SITES TO THE TARGET
      DO 204 L=1,NSITES                                                 OLE03030
      R(L)=((ITEMTG(3)-XZ(L))**2+(ITEMTG(4)-YZ(L))**2)**.5              OLE03040
C     CHECK TO MAKE SURE RANGE RESTRICTION NOT VIOLATED
      IF(((R(L)-AA).LT.0).OR.((MTPQI-R(L).LT.0).AND.(ITPTPQ.EQ.1)))     OLE03050
     1GO TO 206                                                         OLE03060
C     RANGE RESTRICTION IS NOT VIOLATED
C     PICKING THE SITE THAT GIVES MIN RANGE
      M=M+1                                                             OLE03070
      IF(M.GT.1) GO TO 205                                              OLE03080
      IASITE=L                                                          OLE03090
      RI=R(L)                                                           OLE03100
      GO TO 204                                                         OLE03110
  205 IF(RI.LT.R(L)) GO TO 204                                          OLE03120
      RI=R(L)                                                           OLE03130
      IASITE=L                                                          OLE03140
      GO TO 204                                                         OLE03150
C     NK=THE # OF SITES WHICH FAIL RANGE RESTRICTIONS
  206 NK=NK+1                                                           OLE03160
      IF(NK.LT.NSITES) GO TO 204                                        OLE03170
C     THIS TARGET IS OUT OF RANGE OF ALL SITES
C     SO MARK THIS TARGET AS NOT AVAIALABLE FOR ANY AIRCRAFT
      IATGT(ITARGN,7)=4                                                 OLE03180
C     GO LOOK FOR ANOTHER TARGET FOR THIS MISSION
      GO TO 199                                                         OLE03200
C     HAVE SELECTED THE SITE, CALCULATE EVENT TIMES
  204 CONTINUE                                                          OLE03210
      GO TO 400                                                         OLE03220
C     THERE ARE NO TARGETS THAT THIS AIRCRAFT CAN ATTACK
  250 IAIR(IMISS,6)=8                                                   OLE03230
      MISSON(IMISS,7)=8                                                 OLE03240
      MISSON(IMISS,1)=IMISS                                             OLE03250
C     SO DROP THIS MISSION TO THE BOTTOM OF THE MISSON
C     QUEUE AND DO NOT INCREASE THE NUMBER OF ACTIVE MISSION
      MISSON(IMISS,6)=480                                               OLE03260
C     ANY TARGETS THAT HAVE BEEN MARKED  AS NOT FEASIBLE
C     TO ATTACK WITH THIS AIRCRAFT REMOVE THAT MARKING
      DO 950 L=1,NTGTS                                                  OLE03270
      IF(IATGT(L,7).NE.2) GO TO 950                                     OLE03280
      IATGT(L,7)=0                                                      OLE03290
  950 CONTINUE                                                          OLE03300
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C       UPDATE COUNTERS
        NMISS=NMISS+1                                                   OLE03310
C       PLACE MISSION IN PROPER PLACE IN MISSION MATRIX
        GO TO 500                                                       OLE03320
C       WHAT TYPE OF SYSTEM IS IT
  400   IF(ITPTPQ.NE.1) GO TO 401                                       OLE03330
C       IT IS THE 10
C       CALCULATE THE TIME THAT THE AIRCRAFT WILL DROP
C       IT'S ORDNANCE
        ITTDP=(R(IASITE)*60)/IAIR(IMISS,7)+2+2                          OLE03340
C       CALCULATE THE TOTAL MISSION TIME
        ITMT=ITTDP*2-2                                                  OLE03350
C       CALCULATE THE TIME THAT THE AIRCRAFT WILL
C       START ITS RUN UNDER CONTROL OF THE PTR
        ITTSR=ITTDP-2+IAIR(IMISS,1)                                     OLE03360
        ITTDP=ITTSR+2                                                   OLE03370
C       CHECK FUEL FEASIBILITY
        GO TO 402                                                       OLE03380
C       IT IS THE 27
C       CALCULATE THE TIME THAT THE AIRCRAFT WILL DROP
C       IT'S ORDNANCE
  401   ITTDP=(R(IASITE)*60)/IAIR(IMISS,7)+2+1                          OLE03390
C       CALCULATE THE TOTAL MISSSION TIME
        ITMT=ITTDP*2-1                                                  OLE03400
C       CALCULATE THE TIME THAT THE AIRCRAFT WILL
C       START ITS RUN UNDER CONTROL OF THE PTR
        ITTSR=ITTDP-1+IAIR(IMISS,1)                                     OLE03410
        ITTDP=ITTSR+1                                                   OLE03420
C       DOES THE AIRCRAFT HAVE ENOUGH FUEL TO MAKE THE MISSION
  402   IF(ITMT.LT.(IAIR(IMISS,2)-5)) GO TO 405                         OLE03430
C       NO IT DOESN'T SO MARK THIS TARGET AS NOT ATTACKABLE
C       BY THIS AIRCRAFT
  403   IATGT(ITARGN,7)=2                                               OLE03440
C       GO LOOK FOR ANOTHER TARGET
        GO TO 199                                                       OLE03460
C       THERE IS ENOUGH FUEL
C       ARE THERE ANY MISSIONS IN THE QUEUE OF THE SITE
C       WHICH WILL CONTROL THIS MISSION?
  405   IF(NTGS(IASITE).EQ.0) GO TO 410                                 OLE03470
C       THERE WAS A MISSION IN THE QUEUE OF THIS SITE
C       FIND OUT WHERE THIS MISSION WILL GO IN THE QUEUE
        JJ=NTGS(IASITE)                                                 OLE03480
        DO 406 L=1,JJ                                                   OLE03490
        IF(IDSITE(IASITE,L,3).LE.ITTSR) GO TO 406                       OLE03500
        IF(IDSITE(IASITE,L,2).GE.ITTDP) GO TO 407                       OLE03510
C       THE POSITIVE CONTROL TIME FOR THIS MISSION OVERLAPS
C       THE POSITIVE CONTROL TIME FOR ANOTHER MISSION
C       ALREADY IN THE QUEUE
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C       ADJUST THE MISSSION EVENT TIMES FOR THE MISSION
        IA=IDSITE(IASITE,L,3)-ITTSR                                     OLE03520
        ITTSR=ITTSR+IA                                                  OLE03530
        ITTDP=ITTDP+IA                                                  OLE03540
        ITMT=ITMT+IA                                                    OLE03550
C       CHECK TO SEE IF FUEL RESTRICTION VIOLATED
        IF(ITMT.GT.(IAIR(IMISS,2)-5)) GO TO 403                         OLE03560
        GO TO 406                                                       OLE03570
C       THIS MISSION WILL FIT IN BETWEEN TWO EXISTING MISSIONS
C       ENTER VALUES FOR THIS MISSION IN THE QUEUE
  407   K=NTGS(IASITE)+1                                                OLE03580
        J=K-L                                                           OLE03590
        DO 408 M=1,J                                                    OLE03600
        KMI=K-1                                                         OLE03610
        DO 409 N=1,3                                                    OLE03620
        IDSITE(IASITE,K,N)=IDSITE(IASITE,KMI,N)                         OLE03630
  409   CONTINUE                                                        OLE03640
        K=K-1                                                           OLE03650
  408   CONTINUE                                                        OLE03660
        NTGS(IASITE)=NTGS(IASITE)+1                                     OLE03670
C       ENTER VALUES FOR THIS MISSION IN THE QUEUE
        IDSITE(IASITE,L,1)=IMISS                                        OLE03680
        IDSITE(IASITE,L,2)=ITTSR                                        OLE03690
        IDSITE(IASITE,L,3)=ITTDP                                        OLE03700
        MISSON(IMISS,6)=ITTDP                                           OLE03710
C       UPDATE COUNTING VARIABLES
        NMISS=NMISS+1                                                   OLE03720
        NAMISS=NAMISS+1                                                 OLE03730
        GO TO 411                                                       OLE03740
  406   CONTINUE                                                        OLE03750
C       THERE WERE NO MISSSIONS IN THE QUEUE OF THIS  SITE
  410   NTGS(IASITE)=NTGS(IASITE)+1                                     OLE03760
C       ENTER VALUES FOR THIS MISSION IN THE QUEUE
        L=NTGS(IASITE)                                                  OLE03770
        IDSITE(IASITE,L,1)=IMISS                                        OLE03780
        IDSITE(IASITE,L,2)=ITTSR                                        OLE03790
        IDSITE(IASITE,L,3)=ITTDP                                        OLE03800
        MISSON(IMISS,6)=ITTDP                                           OLE03810
C       UPDATE COUNTING VARIABLES
        NMISS=NMISS+1                                                   OLE03820
        NAMISS=NAMISS+1                                                 OLE03830
C       REMOVE THE MARKING FROM ANY TARGETS THAT HAVE BEEN
C       MARKED AS UNAVAIALABLE FOR THIS AIRCRAFT
  411   DO 412 L=1,NTGTS                                                OLE03840
        IF(IATGT(L,7).NE.2) GO TO 412                                   OLE03850
        IATGT(L,7)=0                                                    OLE03860
  412   CONTINUE                                                        OLE03870
C       TABULATE THE VALUES IN THE MISSON MATRIX
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      MISSON(IMISS,1)=IMISS                                              OLE03880
      MISSON(IMISS,2)=ITARGN                                             OLE03890
      MISSON(IMISS,3)=IASITE                                             OLE03900
      MISSON(IMISS,4)=IATGT(ITARGN,5)                                    OLE03910
      MISSON(IMISS,5)=R(IASITE)                                          OLE03920
  500 K=IMISS                                                            OLE03930
C     UPDATE COUNTING VARIABLES
      IMISS=IMISS+1                                                      OLE03940
      DO 501 L=1,NMISS                                                   OLE03950
      IF(K.EQ.1) GO TO 800                                               OLE03960
      M=K-1                                                              OLE03970
C     LOCATE THIS MISSION IN THE PROPER PLACE IN THE
C     MISSON MATRIX
      IF(MISSON(K,6).GE.MISSON(M,6)) GO TO 800                           OLE03980
      DO 502 I=1,7                                                       OLE03990
      ITMISS(I)=MISSON(M,I)                                              OLE04000
      MISSON(M,I)=MISSON(K,I)                                            OLE04010
      MISSON(K,I)=ITMISS(I)                                              OLE04020
  502 CONTINUE                                                           OLE04030
      K=K-1                                                              OLE04040
  501 CONTINUE                                                           OLE04050
C
CC          COMPUTATION OF CEP
C
  700 MISSON(MISSC,7)=7                                                  OLE04060
      NTA=NTA+1                                                          OLE04080
      J=MISSC                                                            OLE04090
      I=MISSON(MISSC,1)                                                  OLE04100
      IF(IAIR(I,4).EQ.500) LR=LR1(MISSON(J,4))                           OLE04110
      IF(IAIR(I,4).EQ.1000) LR=LR2(MISSON(J,4))                          OLE04120
      N=IAIR(I,5)                                                        OLE04130
      IAIR(I,7)=300                                                      OLE04140
      IAIR(I,6)=10000                                                    OLE04150
      IF(IAIR(I,4).EQ.500) HD=2.018415                                   OLE04160
      IF(IAIR(I,4).NE.500) HD=2.041445                                   OLE04170
      XT=IATGT(MISSON(J,2),3)                                            OLE04180
      YT=IATGT(MISSON(J,2),4)                                            OLE04190
      XU=XZ(MISSON(J,3))                                                 OLE04200
      YU=YZ(MISSON(J,3))                                                 OLE04210
      XP=XT*(1.-HD/SQRT(XT**2+YT**2))                                    OLE04220
      YP=(YT/XT)*XP                                                      OLE04230
      GRANGE=SQRT((XP-XU)**2+(YP-YU)**2)                                 OLE04240
      SLRNGI=SQRT(GRANGE**2+(.0001645*IAIR(I,6))**2)                     OLE04250
      IF(ITPTPQ.EQ.2) GO TO 7010                                         OLE04260
C
C     CEP=
C     CEP FORMULA CLASSIFIED DERIVED FROM INFORMATION IN REF. 2
C
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      GO TO 7020                                                        OLE04280
 7010 IF(SLRNG1.GT.50.) GO TO 7015                                      OLE04290
C
C     CEP=
C     CEP FORMULA CLASSIFIED DERIVED FROM INFORMATION IN REF. 3
C
      GO TO 7020                                                        OLE04310
 7015 IAIR(I,7)=500                                                     OLE04320
      IAIR(I,6)=20000                                                   OLE04330
      IF(IAIR(I,4).EQ.500) HD=4.62574                                   OLE04340
      IF(IAIR(I,4).NE.500) HD=4.75405                                   OLE04350
      XP=XT*(1.-HD/SQRT(XT**2+YT**2))                                   OLE04360
      YP=(YT/XT)*XP                                                     CLE04370
      GRANGE=SQRT((XP-XU)**2+(YP-YU)**2)                                OLE04380
      SLRNG1=SQRT(GRANGE**2+(.0001645*IAIR(I,6))**2)                    OLE04390
C
C     CEP=
C     CEP FORMULA CLASSIFIED DERIVED FROM INFORMATION IN REF. 3
C
C          BOMB DROPPING SUBPROGRAM
C
C   NOW BEGIN BOMB DROPPING PORTION OF PROGRAM                          OLE04070
C    NOW SET THE APPROPRIATE STD DEV OF BALLISTIC DISPERSION            OLE04410
 7020 IF(IAIR(I,6).EQ.10000) SDBD=12.40                                 OLE04420
      IF(IAIR(I,6).EQ.10000) SDBR=14.42                                 OLE04430
      IF(IAIR(I,6).EQ.20000) SDBD=26.95                                 OLE04440
      IF(IAIR(I,6).EQ.20000) SDBR=31.85                                 OLE04450
C   FIND STD DEV INHERENT IN CEP AT THIS ALTITUDE AND RANGE             OLE04460
      SDTD=CEP/1.1774                                                   OLE04470
      SDTR=CEP/1.1774                                                   OLE04480
      IF((SDBD.GE.SDTD).OR.(SDBR.GE.SDTR)) GO TO 7045                   OLE04490
C   NOW CALCULATE STD DEV OF SYSTEM(AIRCRAFT AND RADAR)                 OLE04500
      SDSD=SQRT(SDTD**2-SDBD**2)                                        OLE04510
      SDSR=SQRT(SDTR**2-SDBR**2)                                        OLE04520
      GO TO 7050                                                        OLE04530
 7045 IF(SDBR.GE.SDTR) SDTR=SDBR                                        OLE04540
      IF(SDBR.GE.SDTR) SDSR=0.                                          OLE04550
      IF(SDTR.GT.SDBR) SDSR=SQRT(SDTR**2-SDBR**2)                       OLE04560
      IF(SDBD.GE.SDTD) SDTD=SDBD                                        OLE04570
      IF(SDBD.GE.SDTD) SDSD=0.                                          OLE04580
      IF(SDTD.GT.SDBD) SDSD=SQRT(SDTD**2-SDBD**2)                       OLE04590
C    NOW CALCULATE CENTER OF IMPACT POINT FOR THIS DROP(X,Y)
 7050 CALL RANDU(IX,IY,YFL)                                             OLE04610
      IX=IY                                                             OLE04620
      SEED=YFL                                                          OLE04630
      NN=2*N+2                                                          OLE04640
      CALL GGNOR(SEED,NN,RRR)                                           OLE04650
      X=RRR(1)*SDSD                                                     OLE04660
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      Y=RRR(2)*SDSR                                                    OLE04670
      PK=0.                                                            OLE04680
      IBC=0                                                            OLE04690
C   NOW GO TO CLUSTER OR RIPPLE PROCESSER, AS APPROPRIATE              OLE04700
      IF (RIPPLE) GO TO 7500                                           OLE04710
C   BEGIN HERE IF CLUSTER DROP                                         OLE04720
      DIS=-9999.9                                                      OLE04730
      DO 7400 K=1,N                                                    OLE04740
      KK=2*K+1                                                         OLE04750
      KKK=2*K+2                                                        OLE04760
      X1=RRR(KK)*SDBD                                                  OLE04770
      Y1=RRR(KKK)*SDBR                                                 OLE04780
      X2(K)=X+X1                                                       OLE04790
      Y2(K)=Y+Y1                                                       OLE04800
      D=SQRT(X2(K)**2+Y2(K)**2)                                        OLE04810
      IF(D.LE.LR) IBC=IBC+1                                            OLE04820
 7400 CONTINUE                                                         OLE04830
      GO TO 7650                                                       OLE04840
C   BEGIN RIPPLE PROCESS HERE                                          OLE04850
 7500 DIS=.5148*IAIR(I,7)*TIME                                         OLE04860
      DO 7600 K=1,N                                                    OLE04870
      AI=K                                                             OLE04880
      KK=2*K+1                                                         OLE04890
      KKK=2*K+2                                                        OLE04900
      X1=RRR(KK)*SDBD                                                  OLE04910
      Y1=RRR(KKK)*SDBR                                                 OLE04920
      M=N/2                                                            OLE04930
      IF  (M*2.EQ.N) Y12=Y-(M+.5-AI)*DIS                               OLE04940
      IF (M*2.NE.N) Y12=Y-(M+1.-AI)*DIS                                OLE04950
      X2(K)=X+X1                                                       OLE04960
      Y2(K)=Y12+Y1                                                     OLE04970
      D=SQRT(X2(K)**2+Y2(K)**2)                                        OLE04980
      IF(D.LE.LR) IBC=IBC+1                                            OLE04990
 7600 CONTINUE                                                         OLE05000
 7650 IF(IBC.GT.0) KILL=KILL+1                                         OLE05010
      NBOT=NBOT+IBC                                                    OLE05020
      NTBOMB=NTBOMB+N                                                  OLE05030
C     HAVE ALL AIRCRAFT BEEN ASSIGNED                                  OLE05040
      IF(NCHECK.EQ.0) GO TO 801                                        OLE05050
C     YES ALL AIRCRAFT HAVE BEEN ASSIGNED SO NOW JUST                  OLE05060
C     EXECUTE THE REMAINING MISSIONS                                   OLE05070
      GO TO 811                                                        OLE05080
  820 ANBOT=ANBOT+NBOT                                                 OLE05090
      ANBOTS=ANBOTS+NBOT**2                                            OLE05110
      ATH=ATH+KILL                                                     OLE05120
      ATHS=ATHS+KILL**2                                                OLE05130
      WRITE(6,2053) LAL,KILL,NTA,NBOT,NTBOMB                           OLE05140
 9999 CONTINUE                                                         OLE05150
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      ATH=ATH/NOT                                                          OLE05120
      ANBOT=ANBOT/NOT                                                      OLE05130
      SD1=SQRT((ATHS-ATH**2*NOT)/(NOT-1))                                  OLE05140
      SD2=SQRT((ANBOTS-ANBOT**2*NOT)/(NOT-1))                              OLE05150
      WRITE(6,2056)
      WRITE(6,2054) NOT,ATH,SD1,J,ANBOT,SD2,NTBOMB
 2050 FORMAT('0',T43,'TPQ TYPE =',T62,I2/T43,'NO. OF SITES=',              OLE05180
     1T62,I2/T43,'TARGET MIX=',T62,I2/T43,'SITE LOCATIONS',T65,'X',        OLE05190
     26X,'Y')                                                             OLE05200
 2051 FORMAT(T52,'SITE',I1,T63,F4.0,3X,F4.0)                              OLE05210
 2052 FORMAT('0',T43,'TRIAL',T52,'TGTS',T61,'TGTS',T73,'NO.BOMBS',        OLE05220
     1T86,'NO. BOMBS'/T44,'NO.',T52,'HIT',T59,'ATTEMPTED',T74,'ON TGT',OLE05230
     2  T87,'DROPPED'/T43,'******',T52,'****',T59,'*********',T73,       OLE05240
     3'*********',T86,'**********')                                       OLE05250
 2053 FORMAT(T43,I3,T52,I4,T62,I3,T73,I5,T87,I5)                          OLE05260
 2054 FORMAT('0',T43,'NO. OF TRIALS=',T80,I5//                            OLE05270
     1  T43,'AVE. NO. TGTS HIT=',T81,F5.0/                                OLE05280
     2  T47,'STD. DEV.=', T81, F5.1//                                     OLE05290
     3  T43,'NO. TGTS ATTEMPTED(PER TRIAL)=',T80,I5//                     OLE05300
     4  T43, 'AVE. NO. BOMBS ON TGT=', T81, F5.0/                         OLE05310
     5  T55,'STD. DEV.=',T81,F5.1//                                       OLE05320
     6  T43,'TOTAL NO. BOMBS DROPPED(PER TRIAL)=',T80,I5)                 OLE05330
 2055 FORMAT('1',//////////)                                              OLE05340
 2056 FORMAT('0'//)                                                       OLE05350
      STOP                                                                OLE05360
      END                                                                 OLE05370
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ABSTRACT

The probability of hitting a target of radius "r" with "b" bombs is calculated and tabled for given values of CEP of a TPQ system. For each CEP, "r" varies from 10 to 100 meters and "b" varies from 1 to 6, 10, or 20 depending on the bomb load. These probabilities are compared graphically to analyze the difference in hit probabilities for different drop release modes (single, cluster and ripple), different target sizes, and different target location errors.

Three TPQ-10's and three, two and one TPQ-27 are operated in a computer model of a Marine Amphibious Force operation, statistics are gathered on the number of targets hit with each system and their relative effectiveness is compared. It is concluded that under certain conditions two TPQ-27's can be at least as effective as three TPQ-10's and that in a few specific situations one TPQ-27 can perform as effectively as three TPQ-10's.

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ordnance delivery